

Vol. XII, Sec. D, No. 6

NOVEMBER, 1917

THE PHILIPPINE JOURNAL OF SCIENCE

ALVIN J. COX, M. A., Ph. D.
GENERAL EDITOR

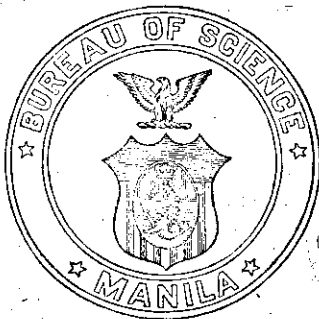
SCIENTIFIC LIBRARY
INSTITUTE OF SCIENCE
(Formerly Bureau of Science)
Manila

SECTION D

GENERAL BIOLOGY, ETHNOLOGY,
AND ANTHROPOLOGY

EDITED WITH THE COÖPERATION OF

R. C. MCGREGOR, A. B.; R. P. COWLES, Ph. D.; C. F. BAKER, A. M.
S. F. LIGHT, M. A.; C. S. BANKS, M. S.; L. D. WHARTON, M. A.
W. SCHULTZE; H. O. BEYER, M. A.; H. E. KUPFER, A. B.



BUREAU OF
AMERICAN ETHNOLOGY
MAR 23 1918
LIBRARY

MANILA
BUREAU OF PRINTING
1917

PUBLICATIONS FOR SALE BY THE BUREAU OF SCIENCE, MANILA, PHILIPPINE ISLANDS

ETHNOLOGY

A VOCABULARY OF THE IGOROT LANGUAGE AS SPOKEN BY THE BONTOC IGOROTS

By WALTER CLAYTON CLAPP

Order No. 408. Paper, 89 pages, \$0.75, postpaid.

The vocabulary is given in Igorot-English and English-Igorot.

THE NABALOI DIALECT

By OTTO SCHEERER

and

THE BATAKS OF PALAWAN

By EDWARD Y. MILLER

Order No. 403. Paper, \$0.25; half morocco, \$0.75; postpaid.

The Nabaloi Dialect (65 pages, 29 plates) and the Bataks of Palawan (7 pages, 6 plates) are bound under one cover.

THE BATAN DIALECT AS A MEMBER OF THE PHILIPPINE GROUP OF LANGUAGES

By OTTO SCHEERER

and

"F" AND "V" IN PHILIPPINE LANGUAGES

By CARLOS EVERETT CONANT

Order No. 407.

These two papers are issued under one cover, 141 pages, paper, \$0.80, postpaid.

THE SUBANUNS OF SINDANGAN BAY

By EMERSON B. CHRISTIE

Order No. 410. Paper, 121 pages, 1 map, 29 plates, \$1.25, postpaid.

Sindangan Bay is situated on the northern coast of Zamboanga Peninsula. The Subanuns of this region were studied by Mr. Christie during two periods of five and six weeks, respectively.

The 29 plates illustrate the Subanuns at work and at play; their industries, houses, altars, and implements; and the people themselves.

THE HISTORY OF SULU

By NAJEEB M. SALEEBY

Order No. 406. Paper, 275 pages, 4 maps, 2 diagrams, \$0.75, postpaid.

In the preparation of his manuscript for The History of Sulu, Doctor Saleeby spent much time and effort in gaining access to documents in the possession of the Sultan of Sulu. This book is a history of the Moros in the Philippines from the earliest times to the American occupation.

ETHNOLOGY—Continued

STUDIES IN MORO HISTORY, LAW, AND RELIGION

By NAJEEB M. SALEEBY

Order No. 405. Paper, 107 pages, 16 plates, 5 diagrams, \$0.25; half morocco, \$0.75; postpaid.

This volume deals with the earliest written records of the Moros in Mindanao. The names of the rulers of Magindanao are recorded in five folding diagrams.

NEGRITOS OF ZAMBALES

By WILLIAM ALLAN REED

Order No. 402. Paper, 83 pages, 62 plates, \$0.25; half morocco, \$0.75; postpaid.

Plates from photographs, many of which were taken for this publication, show ornaments, houses, men making fire with bamboo, bows and arrows, dances, and various types of the people themselves.

INDUSTRIES

PHILIPPINE HATS

By C. B. ROBINSON

Order No. 415. Paper, 66 pages, 8 plates, \$0.50 postpaid.

This paper is a concise record of the history and present condition of hat making in the Philippine Islands.

THE SUGAR INDUSTRY IN THE ISLAND OF NEGROS

By HERBERT S. WALKER

Order No. 412. Paper, 145 pages, 10 plates, 1 map, \$1.25, postpaid.

Considered from the viewpoint of practical utility, Mr. Walker's Sugar Industry in the Island of Negros is one of the most important papers published by the Bureau of Science. This volume is a real contribution to the subject; it is not a mere compilation, for the author was in the field and understands the conditions of which he writes.

A MANUAL OF PHILIPPINE SILK CULTURE

By CHARLES S. BANKS

Order No. 413. Paper, 53 pages, 20 plates, \$0.75, postpaid.

In A Manual of Philippine Silk Culture are presented the results of several years' actual work with silk-producing larvae together with a description of the new Philippine race.

THE PHILIPPINE JOURNAL OF SCIENCE

D. GENERAL BIOLOGY, ETHNOLOGY,
AND ANTHROPOLOGY

VOL. XII

NOVEMBER, 1917

No. 6

SNAKES AND LIZARDS KNOWN FROM NEGROS, WITH DESCRIPTIONS OF NEW SPECIES AND NEW SUBSPECIES

By EDWARD H. TAYLOR

(From the Section of Fisheries, Biological Laboratory, Bureau of Science, Manila)

TWO PLATES AND TWO TEXT FIGURES

This paper is based for the most part on collections made by myself in Occidental Negros, P. I. Two principal localities are represented: one is Isabela and the near-by mountains; the other, Mount Canlaon, or Malaspina, a volcano rising to a height of 2,461 meters in the north-central part of the island.

The most fertile field for collecting was on Canlaon Volcano at from 600 to 1,000 meters' elevation. Four trips were made to this mountain, and many specimens were taken. The mountain receives much rainfall during a large part of the year, and for the most part the collecting was done in a heavy downpour. Few places can boast of more mosquitoes. Two new species and three new subspecies of snakes and three new species and one new subspecies of lizards were collected. Many of the known species found exhibited marked variations from the lowland forms; this was especially noticeable in *Sphenomorphus steerei* and *Sphenomorphus jagori*. Most specimens, of both snakes and lizards, were noticeably colored on the ventral surface with canary yellow, a color that is usually wanting on the same species living in the lowlands.

The number of new and unusual species taken leads me to believe that when the mountain is thoroughly explored many other new species will be found.

Mr. Homer McNamara, superintendent of the La Carlota Agriculture Experiment Station, who accompanied me on two of my four trips to Canlaon, made a considerable collection of reptiles at the agricultural farm, which he very kindly presented to me.

The following new species and new subspecies¹ are described in this paper:

SNAKES

Typhlops canlaonensis.

Natrix dendrophiops negrosensis.

Pseudorhabdium mcnamarae.

Calamaria gervasii iridescens.

Trimeresurus wagleri alboviridis.

LIZARDS

Lepidodactylus christiani.

Sphenomorphus arborens.

Siaphos auriculatum.

Leiolepisma pulchellum grande.

SNAKES

Typhlops braminus Daudin.

Common in certain localities. Mr. McNamara collected more than a hundred specimens of this diminutive snake on the agricultural farm at La Carlota. Most of these are dark purplish brown, other specimens are dull pearl-gray. This color does not seem to be caused by age, by disease, or wholly by the fact that the individual is on the point of shedding its skin, since young, old, and newly shed specimens are among the lot. Careful study revealed no other variation save that the scales, especially those on the head, seemed thicker and the eye was dim or totally obscured.

Typhlops canlaonensis sp. nov.

Type.—No. 241, E. H. T. collection. Canlaon Volcano, Negros, P. I.; December 25, 1915; elevation about 750 meters. E. H. Taylor, collector.

Description of type.—Head depressed, a little wider than body; snout projecting moderately; rostral elliptic, distinctly wider behind than at tip of snout and failing to reach level of eyes by half the width of prefrontal, more than one third the width of head; nostrils lateral, not visible from above; nasals large, not in contact behind rostral, not completely divided by nasal cleft, which arises from second labial and passes through nostril and to a point about halfway from nostril to rostral; nasal in contact with first three labials; preocular present, narrowed to a point above, its greatest width, equal to that of ocular, occurs below level of eye; narrowly in contact with supra-ocular above

¹ All specimens, unless otherwise noted, are in my private collection.

and with only the third labial below; practically the same length as ocular; the latter somewhat rectangular in outline, rapidly narrowed to a point above and below, in contact with third and fourth labials; ocular bordered posteriorly by two somewhat enlarged body scales (three on left side); prefrontal wider than deep, distinctly larger than frontal, which is somewhat wider than long and narrowly in contact with prefrontal; supra-oculars larger than either of these scales and about equal in size to parietals, which are a little more elongate and more than half lying behind oculars; interparietal scale not as large as frontal. Eye visible near anterior border of ocular, much below the point of contact with supra-ocular; eye rather large, pupil distinct and whitish; 30 scale rows about the body; tail ending in a sharp spine.

Measurements of the type of Typhlops canlaonensis sp. nov.

	mm.
Length	122
Length of tail	2.5
Width of head	4.2
Width of body	3.5-3.66
Width of tail	3

Color in life.—Above shiny greenish black (appearing greenish in certain lights); snout dark brown; underside of snout, belly, and entire tail pinkish yellow. The dark and the yellow areas are well defined, the black covering 15 scale rows. Head with narrow lighter lines, outlining, more or less, the head scales.

Remarks.—This species is related to *T. ruficauda* Gray, but differs much in color. The rostral does not reach the level of eye and is wider; the tail is wider than long. In coloring it resembles *T. jagori* Peters, from Luzon; but the nasals are not completely divided and do not touch behind the rostral; the second labial is far from twice as large as the first; the tail is pinkish yellow. It is impossible to tell whether the specimen at hand is adult or not. However, it is probable that it is a smaller form than the other two above-mentioned species. Only one specimen was found, although the locality was very thoroughly searched. It was found burrowing under a decayed log.

Python reticulatus Schneider.

Various specimens have been observed in captivity in Negros. There is none in the collections I have studied. Mr. McNamara reports that he killed two of these snakes on the agricultural farm. Each was more than 3 meters in length.

Chersydrus granulatus Schneider.

Common along the coasts of Negros; three specimens in the collection are from Hinigaran.

Natrix spilogaster Boie.

Reported from Negros by Boulenger; I have seen no specimen of this species from Negros.

Natrix dendrophiops negrosensis subsp. nov.

Type.—No. 128, E. H. T. collection. Canlaon Volcano, Occidental Negros, P. I. E. H. Taylor, collector.

Description of type.—Rostral fairly large, nearly twice as wide as high, upper edge curved and distinctly visible from

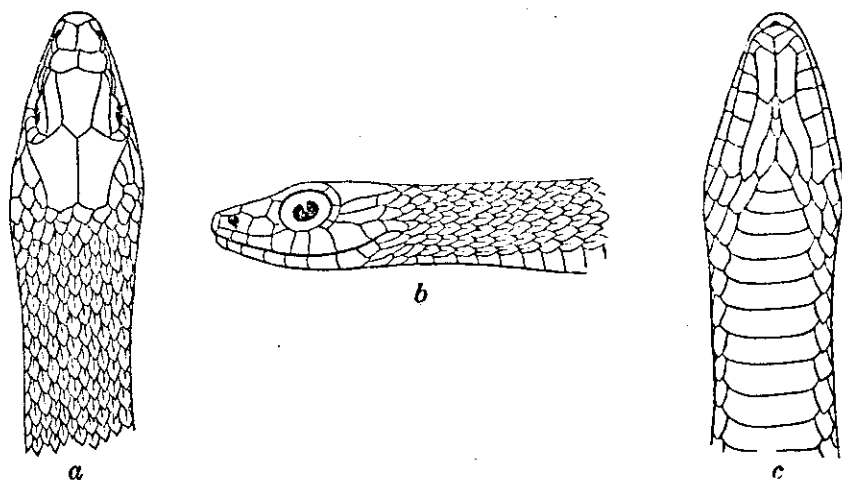


FIG. 1. *Natrix dendrophiops negrosensis* subsp. nov., head; a, top; b, side; c, underside.

above; its sutures with nasal little longer than those with internasals; the latter longer than broad, the suture between them equals their sutures with prefrontals, which is less than that with nasals; prefrontals much broader than long, narrowed on the sides, forming coequal sutures with internasal and frontal, the shortest suture with the supra-ocular; frontal longer than broad, wider, but not as long as supra-oculars, somewhat shield-shaped, longer than its distance from the end of snout, shorter than parietals; the latter longer than broad, bordered laterally by two elongate temporals, in contact with only one postocular; nostril between two nasals, which differ greatly in shape, but are of nearly the same size; loreal nearly square, touching second and third labials; one elongate preocular, twice as high as wide, and

wider at the top than at the bottom, semidivided; three small postoculars (four on right side); temporals 2 + 3; fourth, fifth, and sixth labials entering eye; mental broadly triangular; ten lower labials, sixth and seventh largest; first five in contact with the first chin shield, which is noticeably shorter than the second. Nineteen rows of scales; the outer largest, faintly keeled, all the others strongly keeled; scales with two apical pits easily discernible; anal divided; ventrals, 164; subcaudals, 97. Eye very large.

Color in life.—Reddish brown to olive, with a median series of dark, more or less distinct, spots or bars at intervals of 0.5 centimeter; on the sides and as continuations of the dark bars is a series of dark spots continuous vertically with the others. Below pinkish white with a series of small, more or less regular, black spots on each ventral and subcaudal. Bars on the neck very much wider than elsewhere. Top of head brownish olive. Labials brownish white with dark areas between the first three labials; a distinct black line runs from behind eye to posterior part of eighth supralabial, where it turns and continues downward to the first ventrals. Scales on the head minutely edged with black.

*Measurements of the type of *Natrix dendrophiops negrosensis* subsp. nov.*

	mm.
Length	730
Snout to vent	526
Vent to tip of tail	204
Width of head	11
Length of head	20
Diameter of eye	5

Variation.—The postoculars show a tendency to increase to four; one specimen has the third, fourth, and fifth labials entering the eye, and a second specimen shows four labials entering on the right side.

Remarks.—The following characteristics seem to warrant the separation of this subspecies from typical *Natrix dendrophiops*. There is a tendency to increase the number of postoculars from 3 to 4. There is only a single preocular. Specimens of *N. dendrophiops*, from northern Mindanao, have 2 distinct preoculars;² there is an average of 10 more ventrals and there are constantly 19 instead of 17 rows of scales. The eye is somewhat smaller, and the loreal is lower.

² Only one in the type, see Günther, *Ann & Mag. Nat. Hist.* (1883), V, 11, 136, fig.

TABLE I.—*Natrix dendrophiops negrosensis* subsp. nov.

No.	Locality.	Collector.	Sex or age.	Length.	Tail.	Ventrals.	Subcaudals.	Preoculars.	Postoculars.	Scale rows.	Temporals.	Labials entering eye.	Collection.
				mm.	mm.								
125	Mount Canlaon, Occidental Negros	E. H. Taylor	yg.	315	77	169	93	1	4-3	19	2+3	3, 4, 5	E. H. Taylor.
126	do	do	♂	625	170	168	97	1	4	19	2+3	4, 5, 6	Do.
127	Isabela, Occidental Negros	do	yg.	460	128	162	91	1	3	19	$\frac{2}{1}+3$	<u>4, 5, 6</u> 4, 5, 6, 7	Do.
128	Mount Canlaon, Occidental Negros	do	♂	730	204	164	97	1	4	19	$\frac{2}{1}+3$	4, 5, 6	Do.

Cyclocorus lineatus Reinhardt.

More than twenty specimens were captured on the volcano; many others seen were not taken. A single young specimen killed by Mr. McNamara is the only specimen obtained from the lowlands.

The following differences in scalation are noted between the Negros and Mindanao forms. In the former an average of 15 more ventrals and 4 less subcaudals is found in the males; in the females there are 8 more ventrals and 4 less subcaudals than are found in Mindanao specimens. The number of labials touching the chin shields in Negros specimens is 4 to 5; in Mindanao specimens, 3 to 4, the larger percentage having 3. Three specimens have the anterior part of the body decidedly coppery red to maroon.

Ophites aulicus Linnæus.

Nine specimens were taken by Mr. McNamara. A dead specimen seen at Isabela was not preserved.

Dendrophis pictus Gmelin.

Common in the lowlands of the island, but I have not found it in the mountains. The several specimens in the collection are from Isabela, Hinigaran, Bacolod, and La Carlota.

Oligodon modestus Günther.

I have not seen this snake. The type is from southern Negros.

Elaphe erythura Dumeril and Bibron.

Common in the lowlands. Specimens were taken at Hinigaran and Isabela; three were taken by Mr. McNamara at La Carlota. All of these specimens have blackish tails, but otherwise agree with the same species from other islands.

Gonyosoma oxycephalum Boie.

A single specimen in the Bureau of Science collection was taken at Dumaguete by Mr. Eskridge, of Silliman Institute.

Dendrelaphis modestus Boulenger.³

³ *Dendrelaphis fuliginosus* Griffin.—An examination of the type of this species convinces me that it is a specimen of *D. modestus*. The color on which the species seems to have been based appears to have been caused by some preserving fluid, since the flesh and the intestines are likewise discolored. The type has a few more ventrals and subcaudals than the type of *D. modestus*, but no other difference worthy of mention could be found.

Two specimens of this species were found—one by Mr. McNamara at La Carlota, the other by myself in the mountains near Isabela.

Dendrelaphis terrificus Peters.

It appears that *Dendrelaphis caeruleatus* Griffin is a discolored specimen of this species.* A careful comparison of the type with specimens of *D. terrificus*, from Mindanao, reveals no differences in scalation. One specimen in the Bureau of Science collection is from Negros.

Calamaria gervaisii iridescent subsp. nov.

Type.—No. 201, E. H. T. collection. Canlaon Volcano, Occidental Negros, P. I.; elevation about 900 meters. E. H. Taylor, collector.

Adult female.—Rostral a little deeper than broad, the part visible above equal to the suture between prefrontals; internasals absent; prefrontal very large, about as broad as long, touching two labials laterally; loreal absent; frontal much longer than its distance from the end of snout, twice as wide as supra-oculars, shorter and not as wide as parietals; nostril pierced in a minute nasal; latter fan-shaped; one preocular, very small; supra-ocular scarcely twice as long as wide; one small post-ocular; five upper labials, last largest, third and fourth entering eye; an elongate posterior temporal behind the fifth labial, bordering the parietal; mental as deep as wide, touching the chin shields; three labials touch the first pair of chin shields, which are much larger and slightly wider than the second pair; scales in 15 rows; ventrals, 178; subcaudals, 14; anal single; total length, 306 millimeters; tail, 14.

Color in life.—Dark iridescent brown above, with a very indistinct series of four darker lines, each minutely powdered with a lighter color. Series of white dots begin on the outer row of scales and continue regularly to the base of tail. A second row of dots begins on the second row of scales, but continues only a short distance. Top of head mottled with dark brown, the labials almost covered with yellowish white. Lower labials and scales on neck and chin yellow, with brown maculations. Ventrals barred across belly with blackish brown and canary-

*The color on which Griffin's species appears to have been founded seems to be the result of the specimens having been preserved in formalin, since specimens of the species of *Dendrelaphis*, *Dryophis*, and *Crysopelea* turn this blue and lose almost all their original markings and color when preserved in formalin.

TABLE II.—*Calamaria gervaisii iridescens subsp. nov.*

No.	Locality.	Collector.	Sex.	Length.	Tail.	Ventrals.	Sub-caudals.	Scale rows.	Collection.
				mm.	mm.				
197	Mount Canlaon, Occidental Negros	E. H. Taylor	♀	112	7.5	180	14	15	E. H. Taylor.
199	.....do .....	.....do	♀	180	10	178	14	15	Do.
201	.....do .....	.....do	♀	306	14	178	14	15	Do.
198	.....do	H. McNamara	♂	240	18.5	158	18	15	Do.
200	.....do	E. H. Taylor	♂	205	17	158	19	15	Do.
202	Isabela, Occidental Negros .....	.....do	♂	115	8	165	18	15	Do.

yellow bars, less heavy in front of anus; underside of tail with a median dark line.

Variation.—Five specimens taken agree very well, save that the barring on the belly is much less distinct in very young specimens.

It will be observed that the females have more ventrals and less subcaudals than the males.

Remarks.—It seems that the separation of this form is well justified.⁵ The females have an average of 13 more ventrals and 1 more subcaudal than the average of 20 specimens available for counts from other parts of the Islands. The males have an average of 8 more ventrals and 1 more subcaudal than 12 males available for counts from other islands. Moreover the species grows to a larger size than the typical form, and the eye is larger.

Genus PSEUDORHABDIUM Jan

Rabdion, part., DUMERIL and BIBRON, Mém. Acad. Sci. (1853), 23, 441; Erp. Gén. (1854), 7, 115.

Pseudorabdion JAN, Arch. Zool. Anat. Phys. (1862), 2, 10.

Oxycalamus GÜNTHER, Rept. Brit. Ind. (1864), 199.

Pseudorhabdium BOULENGER, Cat. Snakes Brit. Mus. (1894), 2, 328.

Maxillary teeth, 10 to 12, subequal; anterior mandibular teeth slightly longer than the posterior. Head not distinct from neck; eye small, with round pupil; nostril pierced in a minute nasal; internasals small; loreal present or absent; preocular small or absent; no temporals, parietals in contact with labials. Body cylindrical; scales smooth, without apical pits, in 15 rows; ventrals rounded. Tail short; subcaudals in 2 rows. Malay Peninsula and Archipelago. Three species of this genus are known, and all of them are found in the Philippines.

Key to the species of *Pseudorhabdium*.

a¹. No loreal present.

b¹. Frontal longer than broad. Preocular usually present. Supraocular small longiceps Cantor.

b². Frontal little broader than long; supraoculars smaller still. Preocular wanting oxycephalum Günther.

a². Loreal present. Frontal broader than long; no preocular.

menamaræ sp. nov.

⁵Boulenger lists a specimen from Negros having the anterior part of the body black ventrally; it is not at all improbable that this represents a specimen of this subspecies.

Pseudorhabdium mcnamaræ sp. nov.

Type.—No. 196, E. H. T. collection. Canlaon Volcano, Occidental Negros, P. I., December 24, 1915; elevation about 900 meters. E. H. Taylor, collector.

Description of type.—Rostral small, about as wide as high, a large part visible from above; internasals moderate, five-sided, sutures with nasal and prefrontal equal; forms its shortest suture with the loreal; prefrontals nearly three times as large as internasals, entering eye, touching frontal, loreal, internasal, and supra-ocular; longest suture with loreal, shortest with supra-ocular; frontal hexagonal, a little wider than long, sides touching supra-oculars shortest, parietal sides longest; parietals at least twice as long as wide, six-sided, in contact with fifth labial; nasal rectangular, much elongate, with nostril pierced near anterior edge close by the rostral; behind this a very much enlarged,

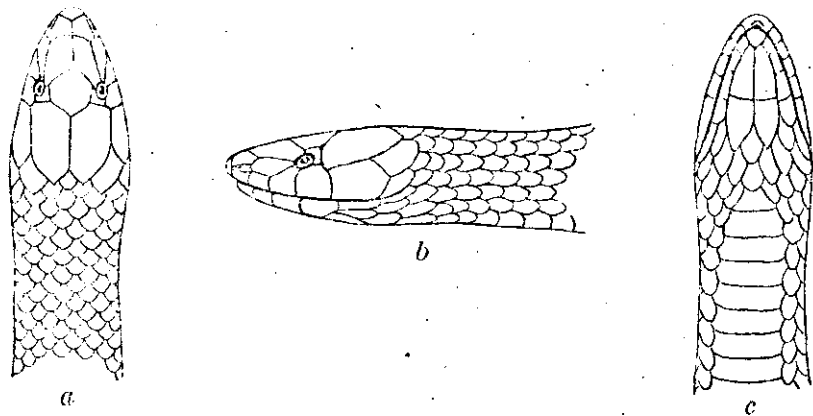


FIG. 2. *Pseudorhabdium mcnamaræ* sp. nov., head; a, top; b, side; c, underside.

elongate, coffin-shaped loreal, in contact with second and third labials, entering eye; supra-ocular extending over only posterior part of eye and somewhat behind; postocular fused with supra-ocular; no anterior temporals; a single large posterior temporal lies behind fifth labial, bordering on the parietal; five upper labials, fifth largest, in the following order of size: 5, 3, 4, 2, 1; third and fourth enter eye; lower labials five; mental small, in contact with anterior chin shields, separating first labials; three labials touch anterior chin shield; second pair of chin shields slightly smaller; anal undivided; ventrals, 140; subcaudals, 22; eye very small; scales smooth, in 15 rows.

Color in life.—Above very shiny, more or less iridescent, dark blackish brown to bluish brown; about the neck is a more or less distinct yellow collar (dim or almost wanting in adults)

formed above by three or four small yellow spots; a cream-colored spot on the fifth upper labial; below canary to yellowish cream with a dark area on the outer edges of each ventral; latter ventrals mottled and subcaudals almost uniformly dark; occasional dark areas on the middle part of the ventrals.

Measurements of the type of Pseudorhabdium mcnamarae sp. nov.

	mm.
Length	242
Snout to anus	220
Tail	21
Width of head	5.5
Width of body	5

Variation.—Males and females differ in the number of ventrals and subcaudals, the average for males being: ventrals, 131; subcaudals, 28; for females: ventrals, 142; subcaudals, 22. Four specimens show the postocular fused with the supra-ocular, and No. 197 has a preocular present. There is some variation in the relative length and width of the frontal. Some specimens have them equal and in one or two the length slightly exceeds the width. The females have the underside of the tail uniformly dark, while the males have it mottled and lighter; Nos. 192, 193, 194, and 195 have the second and the third lower labials fused, thus leaving only two labials touching the first chin shields.

Remarks.—Rather common at altitudes of 800 to 900 meters on the volcano. Specimens were not taken at a higher or a lower altitude. They were found under logs and rotting trash. They feed on earthworms and are in turn preyed upon by *Cyclocorus lineatus*, which is plentiful in the same locality. The females taken in December contained three undeveloped eggs.

I take pleasure in dedicating this species to Mr. Homer McNamara, superintendent of the La Carlota Agricultural Station, who rendered able assistance in making collections on the volcano.

This species represents a distinct section of the genus in having a loreal present. Specimens were usually found in pairs, a male and a female in the same place. (See Table III.)

Pseudorhabdium oxycephalum Günther.

There is a specimen in the British Museum from Negros. I have not been able to examine specimens of this diminutive snake.

Hurria rhynchops Schneider.

Not uncommon along the coasts. Two specimens in the collection from Hinigaran.

TABLE III.—*Pseudorhabdium menamaræ* sp. nov.

No.	Locality.	Collector.	Sex or age.	Length.	Tail.	Ventrals.	Subcaudals.	Preocular.	Postocular.	Collection.
				mm.	mm.					
186	Mount Canlaon, Occidental Negros	E. H. Taylor	♀	193	17	143	23	0	Distinct	E. H. Taylor.
187	do	do	♂	130	16	134	27	0	do	Do.
188	do	do	♂	163	18	135	28	0	do	Do.
189	do	do	♀	217	18	145	22	0	do	Do.
190	do	do	♀	229	20	142	21	0	Fused	Do.
191	do	do	♀	208	19	141	22	0	Distinct	Do.
192	do	do	♀	212	18	145	20	0	do	Do.
193	do	do	♂	163	20	129	27	0	do	Do.
194	do	do	♂	173	20	130	28	0	Fused	Do.
195	do	do	yg.	86	11	130	29	0	Distinct	Do.
196	do	H. McNamara	♀	242	21	140	22	0	Fused	Do.
197	do	E. H. Taylor	♀	209	20	140	23	1	do	Do.

Psalmodynastes pulverulentus Boie.

A specimen of this widely distributed species was taken on Mount Canlaon at an elevation of about 1,000 meters. It is very light yellowish brown, the ventral surface is canary. A second specimen from Negros is in the Bureau of Science collection.

Dryophis prasinus Boie.

A single specimen was taken in the foothills about Mount Canlaon. Probably not as common in Negros as in some other islands.

Boiga angulata Peters.

A single specimen in the Bureau of Science collection was taken by Dr. F. W. Foxworthy on Mount Marapara in Negros.

Lapemis hardwicki Gray.

Common along the coasts, where it is frequently taken in fish corrals. Several specimens in the collection from Hinigaran.

Crysopelea ornata Shaw.

Reported from Negros by Boulenger.

Trimeresurus wagleri albobiridis subsp. nov.

Type.—No. 432, young female, E. H. T. collection. Isabela, Occidental Negros, P. I., September 12, 1915. E. H. Taylor, collector.

Description of type.—Head triangular, very distinct from the neck, nearly 1.5 times as long as wide; rostral about as wide as high, not visible from above, bordered behind by two enlarged internasals; latter narrowly in contact, being nearly separated by three small scales; nasal bordered above by the internasal, two supranasals, and a postnasal folded over the canthus rostralis, the dorsal part much larger than the lateral; nasal large, longer than wide, nostril pierced near anterior margin, bordered behind by postnasal and seven or eight small intercalated scales, completely separating nasal from loreal and the latter from first labials; pit surrounded by the median preocular and two loreals; anterior loreal much larger than posterior, in contact with second labial and one supralabial; three preoculars, the middle one largest, the lower very small; two small subequal postoculars; a narrow, crescentic, elongate subocular, separated from the labials by a series of supralabials; supra-ocular region covered by four enlarged scales, supra-ocular somewhat longer than wide;

this is bordered by another scale along its inner side, nearly as large; a third somewhat smaller scale joins these behind and a fourth borders them in front; supra-ocular and the scale in front in contact with superior preocular; temporals subequal, about four lateral rows; upper labials 11 (10 on the right side); third and fourth largest; first and second subequal in size; 12 lower labials, only one in contact with anterior pair of chin shields; latter large, followed by 3 smaller pairs; head scales above strongly keeled, 14 to 15 rows between supra-ocular scales; scales in 23 rows, faintly keeled, with a slight notch indicated on each side of the scale; ventrals, 163; subcaudals, 50; anal entire.

Color in life.—Above bluish green, growing yellowish green laterally and greenish white below; body crossed with 26 very narrow white lines, not continuing ventrally; tail barred laterally with narrow white and blackish lines; point of tail whitish; a slight line behind eye to angle of jaw; top of head more blue than green, side of head lighter green with no markings. Length, 370 millimeters; tail, 62. Tail prehensile.

Remarks.—Only a single specimen has been collected. It was found in the low mountains of central Negros. I believe this to be the first specimen belonging to this genus taken in the island. Superficially it resembles the common *T. wagleri*, but differs sufficiently to warrant a separation from this species. The most important differences are as follows: It has 29 more ventrals than the average of 17 counts of Philippine specimens; the arrangement of the supra-ocular scales is quite different; a larger number of scales between the supra-oculars, which is five or six more than in the Philippine specimens of *T. wagleri*; the separation of nasal and loreal; the notching of the body scales that is evident in this form does not occur in the other forms of *T. wagleri*.

LIZARDS

Gymnodactylus philippinicus Steindachner.

Four specimens were taken in the low mountains near Isabela. They vary in the distinctness of the transverse bars on the back. All of them are females and were found under logs or flat rocks.

Gekko gekko Linnæus.

Very common in the lowlands, where it can be found in practically all houses. Almost every clump of bamboo is inhabited

by one or more individuals. I obtained it also in the low mountains at Isabela, but not on Mount Canlaon save at its base. I doubt if this species is found above an altitude of 500 meters in the Islands. There are 22 specimens in the collection.

Gekko monarchus Dumeril and Bibron.

A single specimen taken in the mountains near Isabela has been referred to this species. It is an immature female. The spots on the back are blurred, not distinct as in other specimens examined. However, I do not doubt that it is correctly placed with this species.

Hemidactylus frenatus Dumeril and Bibron.

This species is very common in the lowlands, but probably does not ascend to any great altitude. It is found under rocks on the cogon-covered hills on the central-western coast. This species is the only one of the four common house geckos that I have found in such a habitat, the others preferring houses and trees. However, this species is also very common in houses. Numerous specimens were taken.

Peropus mutilatus Weigmann.

Common in houses everywhere in the lowlands. Two specimens taken at Isabela in the mountains were distinctly spotted with dark brown over the ventral surface of body and tail, with a whitish line through the eye; these markings are wanting in other specimens. One specimen from Mindoro resembles these. It is not improbable that they represent a distinct variation. Numerous specimens in the collection.

Lepidodactylus christiani sp. nov. Plate II, fig. 1.

Type.—No. 900, E. H. T. collection. Mount Canlaon, December 23, 1915; elevation about 700 meters. E. H. Taylor, collector.

Description of type.—Head not distinct from neck (probably due to abnormal deposits of calcareous matter under the skin of the neck on both sides); snout rather long, almost twice diameter of eye; distance from nostril to eye equal or minutely longer than distance from eye to auricular opening. (Auricular opening on the left side abnormally wanting, due to calcareous deposits.) Rostral more than twice as wide as long, its upper margin irregular; nostril bordered by the first labial, a large postnasal, which is in contact with two labials and three supranasals (four on the right side), the supranasals completely separate the rostral from the nostril; these scales form a rounded

prominence about the nostril; anterior supranasal in contact with first labial; between the nasals, immediately behind rostral, are three rather enlarged, rounded scales, and a small, probably anomalous, scale; 13 or 14 upper labials, last two very small; angle of mouth without differentiated labial scales; two superimposed, enlarged scales behind postnasal, followed by a row of irregularly enlarged scales bordering labials; 11 lower labials, a row of small rounded scales bordering lower labials, those touching mental smallest, two or three rows of smaller scales bordering these; scales on forehead tubercular, much larger than those on body; ear opening small, its greatest diameter equal to one third or one fourth the diameter of eye, nearer the eye than the foreleg; eye large, pupil vertical; dorsal and lateral scales tubercular, minute; ventrally, scales rounded, somewhat imbricate, and larger.

A long continuous line of 26 enlarged scales in preanal and femoral region, the 9 median largest, in a somewhat curved line, some of the scales apparently perforated with small pores. It is probable that the 9 enlarged scales (not improbably the entire 26) represent the number of pores in the male. A few rows of enlarged scales behind this row in front of anus. Tail much flattened, especially below, bordered on the sides by a broad denticulate fringe, the annulations, scarcely distinguishable; scales below rounding and distinctly larger than those above. Tip of tail regenerated; this has the fringed edge, but the serrations are smaller and scales above and below are not arranged regularly. Foreleg pressed forward reaches anterior border of eye; no distal joint on inner digits, others with clawed distal joints rising from near the broadened extremity of digit; lamella on the broadened portion of digits divided by a median groove; strongly denticulate on outer edge; these divided lamellæ followed by undivided scalelike lamellæ, decreasing in width; fourth toe with 8 or 9 lamellæ, the first four divided; digits of both limbs with webs, a slight web behind the hind leg.

Color.—Above ashy gray to blackish brown on back and sides of arms and tail; snout darker, with a dark line passing through the lower part of eye to shoulder; below lighter, flecked with brown and with traces of yellow; ventral side of tail more or less reddish. The specimen was taken alive just at twilight. Then it appeared to have a series of large well-defined markings above and appeared yellow or white below. As it was necessary to preserve the specimen at once, the colors of the living animal were not observed by daylight.

Measurements of *Lepidodactylus christiani* sp. nov.

	mm.
Length, tail partially regenerated	83
Snout to vent	43
Hind leg	15
Fore leg	12
Width of head	8.5
Greatest body width	11
Greatest tail width	8

Remarks.—I take pleasure in dedicating this species to Lieut. Ralph L. Christian, U. S. Army, who accompanied an expedition to Canlaon and assisted in making collections. The unique specimen of this species was found in a large mass of fern and other roots cut from its resting place in a tree about 8 meters from the ground. This mass was being searched for arboreal Typhlopidae common in such habitats in Mindanao. Although no species of *Typhlops* was found, this species and a new species of *Siaphos* were discovered. Four species of this genus have been described from the Philippines. They are characterized and differentiated by the following key:

Key to the Philippine species of Lepidodactylus.

a¹. Rostral enters nostril.

b¹. Fourteen upper, 15 lower labials; no femoral pores, 9 preanal pores on each side forming a doubly arched series, angular medially.

L. labialis Peters.

b². Thirteen to 14 upper labials, 12 to 13 lower; an unbroken angular series of 12 preanal pores, 6 on each side..... L. brevipes Boettger.

b³. Twelve upper, 11 lower labials (Description of type does not mention pores)..... L. planicaudus Stejneger.

b⁴. Eleven upper, 10 lower labials; preanal and femoral pores arranged in a continuous series angular medially, 19 on each side.

L. aurilineatus Taylor.

a². Rostral separated from nostril. Tail flattened with broad denticulate fringe; scales surrounding nostril forming a raised prominence.

L. christiani sp. nov.

Cosymbotus platyurus Schneider.

Very common in the houses. It is probably seen more frequently than the five other house lizards. I have never found this species in the forest away from human habitation.

Draco ornatus Gray.

Reported from Negros by Boulenger. I have examined no specimen from this island.

Draco spilopterus Weigmann.

Reported from Negros by Boulenger. No specimen has been taken by me.

Hydrosaurus pustulosus Eschscholtz.

Many of these lizards have been observed, but only two specimens are present in the collection, both captured by Mr. McNamara at La Granja. They agree very well with specimens from Mindoro, but the dorsal scales seem larger than those from Polillo, and there are several more femoral pores on each side.

Calotes marmoratus Gray.

A single specimen of what appears to be this species was collected in Negros by Mr. W. Schultze, who presented it to me. It had been preserved in formalin and is brown with black spots and lines. The specimen is halfgrown, with a small dorsal crest.

Gonycephalus sophiæ Gray.

There is a single specimen in the collection of the Bureau of Science, which was collected by Mr. C. S. Banks. It is an adult male, with the nuchal and dorsal crests well developed and continuous. A specimen of what appeared to be this species was observed near Isabela, but it escaped before capture was possible.

Varanus nuchalis Günther.

There are four specimens in the collection. Three were taken by myself at Hinigaran, and the fourth by Mr. McNamara at La Granja. One specimen from the eastern coast of the island was uniformly dark, having no yellow spots. This species is very common about the cane fields and ascends some distance into the mountains.

Mabuya multicarinata Gray.

This species is abundant in Negros. It ascends more than halfway to the summit of Canlaon. There are several specimens in the collection.

Mabuya multifasciata Kuhl.

Common in Negros, where it grows to a more robust size than was found in Mindanao. The males and the females are distinctly different in coloration. The male is uniform bluish green, with an orange lateral spot during the breeding season; above the female is brown, with each scale black-edged, forming indistinct longitudinal lines; laterally, dark with numerous black-edged, greenish white ocelli.

Sphenomorphus * *jagori* Peters.

Two specimens were taken on Canlaon: one young, one adult. The latter is much larger than specimens of *S. jagori* found elsewhere in the Islands. Laterally there is a series of 12 irregular black spots, which mark the termination of the indistinct dorsal reticulations. The broad elongate black stripe is present above the hind leg. There are 44 scale rows around the body, which is 5 or 6 rows more than in specimens from Mindanao. This may have to be considered a distinct subspecies. The markings on the young specimen are but little more distinct than in the adult. Total length of largest specimen, 270 millimeters; snout to vent, 106; foreleg, 31; hind leg, 44; axilla to groin, 55; head to insertion of foreleg, 42; snout to ear opening, 20; width of head, 18; width of body, 20. In the adult specimen the first supra-ocular is divided, making 5 large supra-oculars, 3 touching the frontal.

Sphenomorphus steerei Stejneger.

I have referred to this species the small *Sphenomorphus* found commonly in the mountains of Negros. In scalation it appears identical, but the proportions of the body are different. I have at hand specimens from the small island of Guimaras, the type locality. These likewise differ greatly in proportions, but agree in the scalation of the head. It seems hardly probable that two closely related species occur on Guimaras. It is probable that the type is an immature specimen. I append a table, giving the measurements of three specimens of this species.

TABLE V.—Measurements of *Sphenomorphus steerei* Stejneger.

	Type, Guimaras, 32658, U. S. National Museum.	No. 969, Guimaras, E. H. Tay- lor collec- tion.	No. 908, Negros, E. H. Tay- lor collec- tion.
Length	47	65	74
Tip of snout to vent	24	23	33
Vent to end of tail	23	37	41
Snout to foreleg	12	11	13
Axilla to groin	11(?)	17	20
Foreleg	6	5.5	6.5
Hind leg	10	9	10
Width of head	4.5	4	5
Eye nearer foreleg than snout.....	yes	no	yes

* *Sphenomorphus fasciatus* (Gray).—Reported by Casto de Elera from Negros. I believe this to be a doubtful record.

The color above is dark brown with markings similar to those of *S. steerei*. Specimens from Canlaon have canary-yellow bellies, and the males have a large rose pink spot on the neck, which disappears in alcohol. The species is very common.⁷

Dasia smaragdinum Lesson.

Represented by a single immature specimen. It is grayish olive above with small white spots and a few darker spots mixed with the white spots on the neck. This species does not appear to be rare, as many specimens were seen in the tall forest trees.

Sphenomorphus arborens sp. nov. Plate I. .

Type.—No. 413, E. H. T. collection. Mount Canlaon, Occidental Negros, P. I., December 20, 1915. E. H. Taylor, collector.

Adult male.—Head short and blunt, rostral bent backward over snout, forming a curved suture with frontonasal; latter much wider than deep, in contact with first frenal; no supranasals; prefrontals very large, broadly in contact; frontal triangular, its broadest part anterior to first supra-ocular; in contact with three supra-oculars; frontoparietals distinct, broadly in contact, elongate, touching three supra-oculars; parietals large, forming a suture behind interparietal, which is narrow and elongate; nasal large, pierced by a rather large nostril; two frenals, the first higher and narrower than the second, which is larger than first; two preocular scales superimposed, the lower much the larger; two or three rows of scales between labials and orbit; ten superciliaries, the first especially large, in contact with the frontal; five supra-oculars, last very small (can scarcely be considered a supra-ocular); lower eyelid covered by two rows of scales, the upper small, the second row elongate, enlarged, eleven or twelve in number; small postoculars; five temporals, that bordering the parietal very large; ear large, about half the diameter of eye; six upper labials, fourth and fifth below eye; fifth largest; lower labials four or five, very narrow and elongate; mental moderate, first postmental more than twice as deep; four pairs of chin shields, first pair in contact, second pair separated by one scale, third pair by three scales; fourth pair broken in two; 40 to 42 scale rows

⁷ It is obvious that a more detailed study of these small skinks is needed. I have before me specimens from Palawan, Mindoro, and Mindanao, which apparently are different from described species. Yet they vary considerably among themselves. A study of these small forms has been begun.

about the body, laterally they are arranged in vertical rows; two enlarged preanals, with enlarged scales in front of them; 21 rounding lamellæ under fourth toe. The adpressed hind leg fails to reach the axilla, but reaches to near elbow of adpressed foreleg. The ear is slightly nearer the foreleg than end of snout.

Color in life.—Above brown, variegated with lighter and darker scales, and a median row of irregular dim dark spots; a lateral stripe, beginning on the point of the nose, widening behind ear, continues as a wide broken line of dark irregular spots to some distance on the tail; labials and chin muddy white with a bluish tinge; belly with a wash of canary; tail spotted below; spots on the preanal scales.

Measurements of the type of Sphenomorphus arborens sp. nov.

	mm.
Length	168
Snout to vent	65
Vent to end of tail	103
Snout to foreleg	25
Axilla to groin	32
Width of head	9
Width of body	— 10
Foreleg	20
Hind leg	28

Variation.—The collection contains six adult specimens and seven young, all taken on Mount Canlaon. There is a slight amount of variation in the width of the frontal and in its relation with the first superciliary. Several of the specimens have the neck and the throat a dark muddy color, with a bluish tinge; young colored like the adult.

Remarks.—This species superficially resembles *Sphenomorphus variegatum* Peters, but differs in a number of essential points. There are fewer supra-oculars, the scales on the foot and especially the heel, are larger; the first frenal is high and is not superimposed above another. The hind leg is much shorter, and does not reach the axilla. In *S. variegatum* the hind leg reaches halfway between the foreleg and ear. It is common on Canlaon at an elevation of 800 to 1,200 meters; it is strictly arboreal and is seldom seen on the ground.

Leiolepisma pulchellum grande subsp. nov.

Type.—No. 899, E. H. T. collection. Canlaon Volcano, Negros, P. I.; December 22, 1915; elevation 900 meters. E. H. Taylor, collector.

TABLE V.—*Sphenomorphus arborens* sp. nov.

No.	Locality.	Collector.	Length.	Snout to vent.	Vent to end of tail.	Snout to fore-leg.	Axilla to groin.	Fore-leg.	Hind leg.	Collection.
400	Canlaon Volcano, Negros	E. H. Taylor	(a)	50	(a)	19	27.5	15	22	E. H. Taylor.
401	do	do	84	40	54	16	19.5	12	16	Do.
403	do	do	145	55	90	21	29	17	23	Do.
404	do	do	(a)	27	(a)	12	16	9	13	Do.
405	do	do	122	49	73	20	24	16	21	Do.
406	do	do	112	50	72	20	24.5	15	22	Do.
407	do	do	^b 145	65	81	23	32	70	26	Do.
408	do	do	(a)	35	(a)	14	18	10	14	Do.
409	do	do	(a)	35	(a)	14	17.5	9	13.5	Do.
411	do	do	(a)	34	(a)	13	16.5	9	13	Do.
412	do	do	88	35	43	14	17	10	14	Do.
413	do	do	168	65	103	25	32	20	28	Do.
414	do	do	^b 126	60	66	21	30	17	25	Do.
415	do	do	85	34	51	14	18	9	14.5	Do.

* Mutilated.

^b Tail regenerated.

Description.—Head less pointed than *L. pulchellum* and not narrowed and flattened so abruptly in front of eyes; distance between nasals proportionally less; rostral broadly visible above, length above much greater than height of snout; frontonasal large, not rectangular, but distinctly rounding in front; prefrontals almost as large as frontonasal, forming a median suture about one third of their greatest length; frontal twice as long as wide, narrowed to a long point behind; frontoparietals distinct, their suture much larger than in *L. pulchellum*. Parietals moderate, inclosing an elongate interparietal; nasal large, pierced by the nostril; no supranasals, first frenal distinctly higher than nasal, higher but much smaller than second frenal; two preoculars, the lower largest; nine superciliaries, none in contact with frontal; six supra-oculars, the last as wide as the first; third widest; four in contact with frontal; seven upper labials, the first three elongate, of nearly equal size and shape; last four higher; a scale partly inserted between fourth and fifth and fifth and sixth labials; five or six enlarged temporals. Lower eyelid with an undivided transparent disk; auricular opening two thirds as large as eye; six lower labials, all narrow and elongate; two undivided postmentals, the first small (the small one absent in the cotype); two very much enlarged preanals, which are preceded by three or four enlarged body scales; 25 lamellæ under fourth toe; 22 scale rows about the body; three or four pair of nuchals present.

Color in life.—Dark, mottled brown above with a greenish bronze dorsal streak; dark spots on the parietal region; supra-oculars each with an indistinct lighter line; labials with dark spots, laterally flecked with bronze-greenish light spots; chin, throat, belly, and underside of tail immaculate, iridescent greenish with a wash of bright canary. Legs spotted with minute lighter areas. Tail above spotted with brownish, with a trace of a median lighter streak.

Measurements of the type of Leiolepisma pulchellum grande subsp. nov.

	mm.
Length, end of tail lost	67
Snout to vent	42
Snout to ear	10
Snout to insertion of arm	18
Axilla to groin	22
Foreleg	15
Hind leg	19
Width of head	0.65

The foreleg reaches forward to the nostril; the hind leg fails to reach the axilla by a considerable distance.

Variation.—The cotype varies in not having the frontal narrowed so quickly as the type and the interparietal shorter.

Remarks.—This form differs from *L. pulchellum* in the larger number of supra-oculars; the shape of the head; the shorter hind leg, which does not reach the axilla; the frontal touches four instead of three supra-oculars; the interparietal is very much smaller and narrower than the frontal; two scale rows less around the body. It obviously grows to a larger size. I have ten typical specimens of *L. pulchellum* for comparison. They are invariably shorter, the heads narrower, the median streak brilliant golden yellow, and the tail brownish yellow with the markings almost totally disappearing.

Only two specimens of the present subspecies were taken, these in the same immediate locality on Mount Canlaon.

Siaphos auriculatum sp. nov. Plate II, fig. 2.

Type.—No. 894, E. H. T. collection. Canlaon Volcano, Negros, P. I.; December 23, 1915; elevation 900 meters. E. H. Taylor, collector

Description.—Rostral large, covering the end of the conical snout, forming a broad suture with the frontonasal, about equal to that with the nasals; frontonasal very large, convex anteriorly and concave behind, forming its largest suture with frontal; latter rather triangular in shape, longer than broad, anterior part rounding, not as wide as supra-ocular region; frontoparietals fused into a single large scale, which is distinctly wider than supra-ocular region, in contact with three supra-oculars; interparietal as wide as frontal, but shorter; parietals elongate, diagonal, more than twice as long as wide, joined behind the interparietal, in contact anteriorly with two very small postoculars; three or four pairs of enlarged nuchals; nostril pierced in the middle of the single nasal, which is followed by two frenals subequal in size, as high as the nasal; two superimposed preoculars; eight superciliaries, anterior largest; four supra-oculars, two touching the frontal, second widest; two pairs of slightly enlarged postoculars and a row of scales above the upper labials; a rather enlarged scale between fourth and fifth upper labials; eight upper labials, fifth and sixth largest, below the eye; two greatly enlarged temporals with three or four others not so large; auricular opening comparatively large, a little more than half the diameter of eye; tympanum distinct, not

covered with scales, not deeply sunk; six or seven lower labials; mental rather large, followed by a large undivided postmental, which is followed by three pairs of chin shields; the first in contact, the second separated by a single scale, the third pair separated by three scales and followed by one enlarged scale; scales in 24 rows around body, the two median greatly enlarged; two enlarged anals; the fourth toe slightly longer than third; adpressed limbs fail to meet; 20 lamellæ under fourth toe; lower eyelid with an undivided transparent disk.

Color in life.—Above grayish brown with a median stripe of dark brown, covering part of the two median scale rows, continuing as a dotted stripe on the tail, dim on the neck; a dark brown stripe begins behind the eye and continues laterally to near end of tail, this does not involve the ear and is about three scales wide on the sides; it grows dimmer on the tail; head grayish brown with irregular darker markings, laterally quite dark with a lighter area on each labial; below rather dirty whitish; fingers and toes barred with blackish brown.

Measurements of the type of Siaphos auriculatum sp. nov.

	mm.
Length	97
Snout to vent	43
Axilla to groin	24
Snout to foreleg	17
Foreleg	8.5
Hind leg	14
Width of head	6
Width of body	7

Variation.—Two other specimens were obtained in the same locality. Each has 22 rows of scales around the body. In No. 893 the interparietal is partially fused with the parietal. The median stripe is very dim and the color is iridescent olive-brown with suggestions of a narrow greenish line just above the lateral brown stripe. In No. 895 the stripe appears as a double row of dots. It is the largest specimen, and measures 47 millimeters from snout to vent.

Remarks.—This species has no close affinities. The absence of prefrontals, the size of the auricular opening and the tympanum free from scales are characteristics that clearly differentiate it from other members of the genus. Three specimens were taken in the type locality. It is an arboreal species.

Brachymeles gracilis Fischer.

Specimens were obtained both from Canlaon and Isabela. They agree fairly well with specimens from Mindoro, save that

the fourth labial enters the orbit, while most of those from Mindoro have the fifth entering the orbit. The character is not constant. Scale rows vary between 24 and 30. The sole specimen having 24 rows is from Isabela. Most of those from Canlaon have 28 scale rows. A single specimen taken on Canlaon, No. 397, varies markedly, and were the characters constant would represent a new species. The auricular opening is larger, the foreleg reaches the ear, while in other specimens it fails to reach the ear by nearly half its length; the fourth and fifth labials are below the eye, the hind leg is longer and thicker and is contained in the distance from axilla to groin 2.7 times. In all other specimens the hind leg is always contained more than three times in this distance. There are two well-defined light lines running from above the eye to some distance on the tail; from the ear to the hind leg the stripe is at least two scales wide. There are 30 rows of scales around the body.

Tropidophorus grayi Günther.

Common along the small mountain brooks near Isabela. Always found in the vicinity of water, usually under partly submerged stones or logs. A number of specimens in the collection.

Dibamus argenteus Taylor.*

Two specimens of what appear to be this species have been taken: one was found on Mount Canlaon; the other, near Isabela. Both differ from the type in having the color dark purple with silver blotches and in having seven instead of five scales bordering the interparietal. The eye is scarcely distinguishable; there are two instead of one postocular.

* In the original drawing of this species, *This Journal*, Sec. D (1915), 10, 89, Plate I, fig. 11, the interparietal is shown bordered by three scales. This is an error; five is the correct number. In the description, page 107, it is stated: "2 enlarged labials on each side extending farther back than the rostral;" this should read "2 enlarged lower labials, one on either side of the jaw extending farther back than the rostral."

ILLUSTRATIONS

[Drawings by P. Moskaira.]

PLATE I

Sphenomorphus arborens sp. nov.; *a.*, head, lateral view; *b.*, head, dorsal view.

PLATE II

FIG. 1. *Lepidodactylus christiani* sp. nov.; *a.*, head, lateral view; hind foot, ventral view.

2. *Siaphos auriculatum* sp. nov.; *a.*, head, dorsal view.

TEXT FIGURES

FIG. 1. *Natrix dendrophiops negrensis* subsp. nov., head; *a.*, dorsal view; *b.*, lateral view; *c.*, ventral view.

2. *Pseudorhabdium mcnamarae* sp. nov., head; *a.*, dorsal view; *b.*, lateral view; *c.*, ventral view.

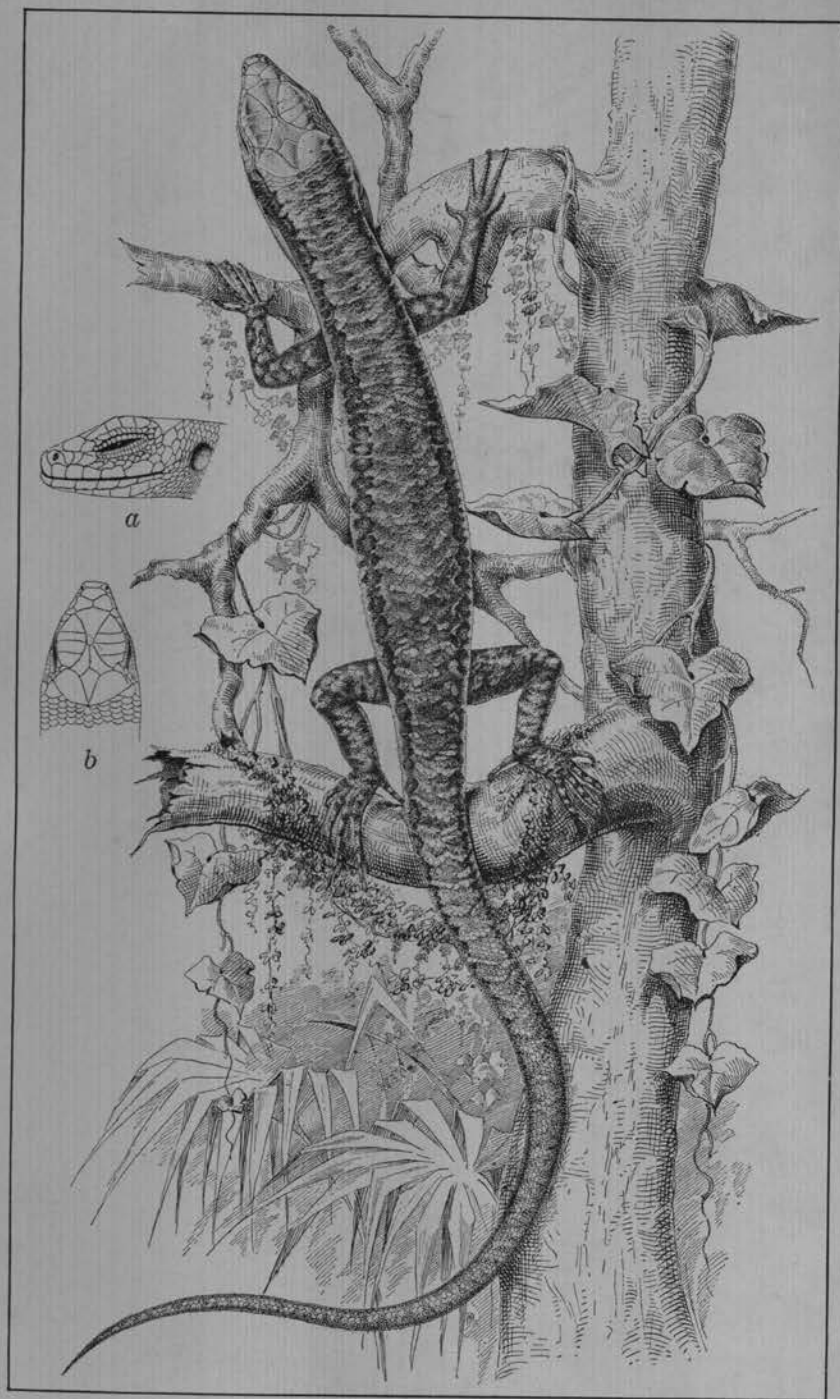


PLATE I. SPHENOMORPHUS ARBORENS SP. NOV.

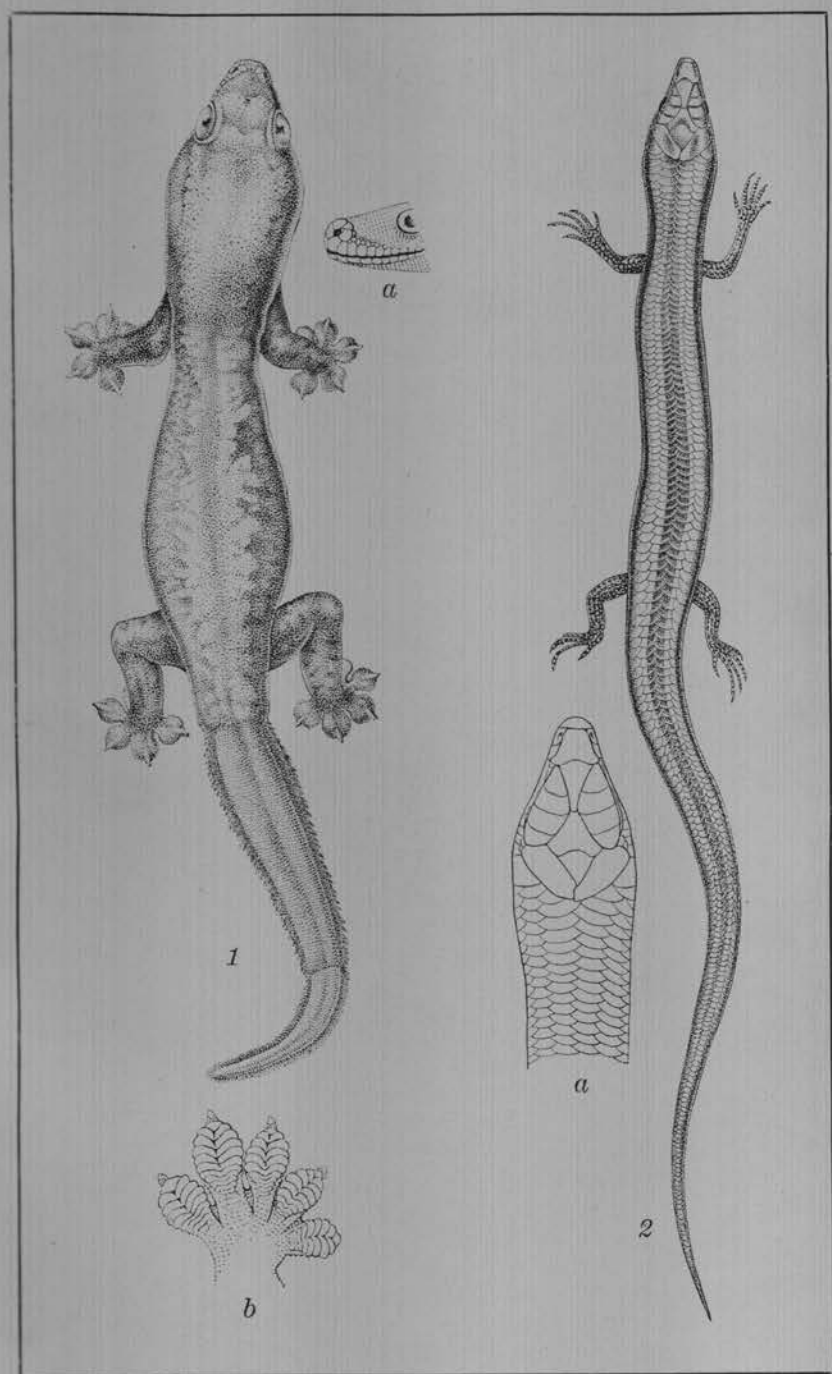


Fig. 1. *Lepidodactylus christiani* sp. nov. 2. *Siaphos auriculatum* sp. nov.

ICHNEUMONOID PARASITES OF THE PHILIPPINES, II

RHOGADINÆ (BRACONIDÆ), II: THE GENUS RHOGAS

By C. F. BAKER

(*Los Baños, P. I.*)

Genus RHOGAS Nees

The Philippine species of this genus fall easily into three subgeneric groups. None of these corresponds exactly to any of the recognized European subgenera. The spurs of the hind tibia always fall considerably short of one third the length of the hind tibia, being short, straight, and pubescent in all of the species studied. In a single species, *Rhogas brownii* sp. nov., they are, in the female, a little longer than usual and slightly curved at the tips. In the Philippine material I have not encountered intermediates between the groups of eye forms, as described below, these being clearly marked and easily distinguished and characterized by other clearly correlated diagnostic features. In the lighter colored species the interocellar area is always piceous or black.

Synopsis of subgenera (Philippine species only).

- a¹. Eyes large, very broadly elliptical, distinctly emarginate; malar space and cheeks relatively small; ocelli large.
- b¹. Radial cell of posterior wings not or very little broadened apically though often narrowed at middle; radial vein weak and decolored or subobsolete; second cubital cell usually long; fourth hind tarsal joint slender; antennæ unicolorous or slightly darker apically.
- Aleiodes (Wesmael) Thomson.
- b². Radial cell of posterior wings strongly broadened apically, not narrowed at middle; radial vein distinct; second cubital cell usually short; legs stout, the fourth hind tarsal joint short and broad; antennæ piceous to black, banded with yellowish. *Rhogas* Thomson.
- a². Eyes small, oval, subelliptical or round, little or not emarginate, relatively very large; ocelli small; legs with fourth hind tarsal joint slender; second cubital cell short..... Aleirhogas subg. nov.

Subgenus Aleiodes (Wesmael) Thomson

Synopsis of the species.

- a¹. Five tergites and, usually, part of the sixth abdominal tergite similarly sculptured; metanotum with a percurrent, median, sharp-rimmed, lanceolate furrow; second cubital cell twice or nearly twice as long as wide, the first transverse cubital vein very oblique; posteromedian mesonotal area with a longitudinal groove.

- b¹. Ocelli large, distance from eyes about equal to the long diameter of an ocellus.
- c¹. Disk of metanotum and part or all of the abdominal tergites black.
cameroni sp. nov.
- c². Unicolorous and stramineous..... cameroni var. flavus var. nov.
- b². Ocelli very large, distance from eyes about one half the long diameter of an ocellus..... palavanicus sp. nov.
- a³. Three, rarely four, abdominal tergites similarly sculptured; metanotum with a single median carina, distinct at least at base; second cubital cell usually less than twice as long as wide; posteromedian subdepressed area of mesonotum plane, regularly or irregularly rugose.
- d¹. Four abdominal tergites similarly sculptured throughout; mesopleura strongly and very broadly depressed on posterior half.
benguetensis sp. nov.
- d². Three abdominal tergites only, similarly sculptured, the third frequently sculptured only at base.
- e¹. First abscissa of radius less than one half the length of second; recurrent vein inserted a distance from second cubital cell equal to first abscissa of radius; thorax and abdomen laterally black-striped.
lateralis sp. nov.
- e². First abscissa of radius less than one half the length of second; recurrent vein inserted a distance from second cubital cell usually less than length of first abscissa of radius.
- f¹. First abdominal tergite very short, little narrowed to base; length two thirds of apical width, the basal width subequal to length; no distinct median carina on third tergite; clypeus transverse, length not more than half the width; body ferruginous, first two tergites stramineous, no piceous markings.
subquadratus sp. nov.
- f². First tergite distinctly longer than broad at apex, more strongly narrowed to base.
- g¹. Clypeus transverse, distinctly broader than long; second cubital cell very short, not narrowed apically; face transversely wrinkled; cheek very broad, nearly half diameter of eye; color stramineous, with piceous lateral stripes on body.
simillimus sp. nov.
- g². Clypeus as long as broad or longer; second cubital cell always much longer than wide and always more or less narrowed apically.
- h¹. Median carina of third tergite becoming obsolete apically; metanotal carina complete.
- i¹. Face shagreened; cheek narrow, about one fourth diameter of eye, outer margin parallel to eye margin, metapleural spiracle large, ovate; stramineous, the side of thorax and first tergite black-striped..... mimicus sp. nov.
- i². Face more or less transversely wrinkled; metapleural spiracle small, circular.
- j¹. Face transversely wrinkled only on upper half; antennae dark-colored, tergites piceous, remainder ferruginous.
- k¹. Metanotum piceous; fore and middle legs unicolorous; cheek nearly one half diameter of eye, its outer margin parallel to eye margin..... bicolor sp. nov.

k. Metanotum concolorous, "a spot at apex of middle and hind femora, more or less of the base and apex of hind tibiae, and the hind tarsi black."

melanosoma Ashm.*

j. Face nearly all transversely wrinkled; antennae pale; abdomen stramineous, excepting borders of first tergite; cheek distinctly narrower above than below where it is one third diameter of eye..... modestus sp. nov.

h. Median carina of third tergite sharply distinct throughout; cheek with outer margin parallel to eye margin.

f. Metanotal carina complete; face shagreened below, transversely wrinkled above; metapleural spiracle circular; vertex back of eyes long and very strongly narrowed.

separatus sp. nov.

f. Metanotal carina incomplete; face all shagreened; metapleural spiracle ovate; vertex back of eyes short and very broad banksi sp. nov.

* The position of this species is very uncertain.

Rhogas (Aleiodes) cameroni sp. nov.

Stramineous; antennae piceous; paler apically; vertex piceous, side margins paler; face faintly and irregularly clouded with piceous; dorsum of thorax, except sutures and median metanotal groove, piceous; upper and lower borders of propleura and a mark on mesopleura below wings piceous; dorsum of abdomen, except first and third to sixth sutures and lateral margins, piceous to black. Legs with femora apically, tibiae, tarsi, and hind coxae more or less stained with piceous. Lower half of hypopygium piceous. Wings faintly smoky, stigma and veins pale brown.

Female, length, 6.5 millimeters.

Head viewed from above thick transverse, with eyes large and bulging, distance between them subequal to distance from occipital carina to front margin of anterior ocellus; vertex somewhat depressed about ocellar area, surface smooth and shining; vertex strongly narrowed back of eyes, occipital carina long and gently incurved; length of vertex back of ocelli subequal to length of exposed cheek margin and to length of ocellar area; ocelli large, distance from ocelli to eyes slightly less than twice inter-ocellar distance and subequal to the long diameter of an ocellus, anterior ocellus slightly farther removed.

Face to mouth longer than wide, slightly wider above due to emargination of eyes, shallow and irregularly rugose-punctate, clypeus smooth; a subobsolete median carina just below antennae; mouth opening large and transversely long-elliptical; clypeus large and broad, twice as broad as long, basal margin somewhat

more curved than apical, surface laterally concave; clypeal pits distant from eyes two and one-half times their diameter. Head viewed from side with prominent, evenly curved face margin, clypeus not projecting; cheeks narrow, about one third the width of eyes, outer margin parallel with eye margin; malar space small, its length subequal to width of cheek; eyes very large, very broadly and bluntly elliptical. Maxillary palpi reaching tegulæ, third joint longest, somewhat widened at middle, fourth shorter and somewhat widened on basal half, fifth and sixth progressively shorter, slender and terete.

Antennæ about as long as entire body; scape subcylindrical, slightly narrowed to base, one and one-half times as long as wide apically; funicle large, more than half length of scape, subcylindrical, slightly narrowed apically; middle flagellar joints about twice as long as wide.

Mesonotum very long, trilobed, the notauli sharply impressed and regularly crenulate as far back as posterior median plane area, the latter with a lanceolate median groove; entire surface of mesonotum smooth and shining. Scutellum anteriorly quadrifoveate, separating carinæ low and equally strong; disk of scutellum smooth. Postscutellum very broadly quadrifoveate. Metanotum very coarsely and openly reticulate-rugose, with a narrow, median, lanceolate groove, which is crossed by several rugæ; metapleura and mesopleura smooth, the latter broadly depressed and irregularly wrinkled below wing, disk with a broad, oblique, curved, deeply impressed, crenulate furrow; spiracle large and subcircular.

Abdomen half again as long as head and thorax together, broadly sessile, six tergites fully exposed, third tergite broadest, all strongly sculptured; first tergite with length nearly one and one-half times the apical width; second tergite about as long as first, little widening apically, sides straight, length subequal to apical width; remaining tergites subequal in length, together somewhat more than half length of second and progressively narrower, sixth with a concave apical margin; a very narrow point of seventh segment projecting beyond sixth; first and second tergites very coarsely and longitudinally striate, striæ on second segment somewhat oblique; striation on remaining tergites finer, thicker, more irregular, and strongly oblique; second suture impressed, but completely connate, the striæ continuous across it; remaining sutures normal, but followed by deeply impressed, crenulated borders; first and second tergites with a strong median carina. Hypopygium large, as long as

fifth and sixth segments together, and deeper than these segments, projecting nearly one third of its length beyond apex of abdomen; ovipositor very short and curved.

Stigma long, its length about five times its width, radius inserted at two fifths from base; first abscissa of radius less than half length of second; second cubital cell very long, not narrowed apically, the length nearly three times the width; the first transverse cubitus strongly oblique, the second perpendicular and decolored; recurrent vein entering extreme apex of first cubital cell; parallel vein straight and inserted at lower third; submedian cell but little longer than median; radial vein in hind wings distinct but pale; nervellus oblique and strongly curved.

LUZON, Laguna, Mount Banahao (*Baker*).

A second female specimen, from Mount Maquiling, is referred to this species, although it differs considerably in color and even in certain minor structural characters. The antennæ and the head are entirely pale; the mesonotum is pale and black-bordered; there is more dark color on the pleuræ, and the median metanotal groove is broader and more irregular.

A third female specimen, from Mount Maquiling, has the antennæ dark and the stigma and the veins even darker, but it entirely lacks all piceous and black markings on the body; the metanotal groove is still broader and is crossed by three conspicuously strong rugæ; the recurrent vein enters first cubital cell a little farther from its apex. Apart from these differences it agrees in structural characters with the species described above; it may be called *Rhogas cameroni* var. *flavus*.

The male of this species is smaller (5.5 millimeters), with much less black on dorsum of abdomen, this often reduced to median spots on first, fifth, and sixth tergites. The striæ on fourth to sixth tergites are straight, not oblique, and not quite complete.

The species is named for the late P. Cameron, a very prolific writer on Oriental Hymenoptera.

Rhogas (Aleiodes) palavanicus sp. nov.

Antennæ and thorax ochraceous; head, abdomen, and legs pale stramineous; first, fourth, fifth, and sixth tergites slightly darkened at base, second and third darkened along median longitudinal line. Wings iridescent, very faintly smoky, and with three large, indistinct, whitish areæ—one in marginal cell, one in anal cell, and one covering part of first cubital and first discoidal cells. Veins, with stigma, stramineous or slightly smoky in part, first abscissa of radius much darker, in sharp contrast

to remainder, the costal margin ochraceous.

Male, length, 3.5 millimeters.

Head viewed from above with very large, but not bulging eyes, which deeply enter vertex, distance between them equal to distance from occipital margin to front margin of anterior ocellus; vertex back of ocelli rather short, due to the very strongly incurving occipital margin; length from ocelli to occipital margin about equal to length of exposed cheek margin; occipital carina subangularly curved at middle; surface of vertex smooth and shining; ocelli large, distance between ocelli slightly less than distance from ocelli to eyes, the latter distance much less than the long diameter of an ocellus, distance to occipital carina less than twice the long diameter of an ocellus. Face subquadrate, eye margins slightly incurved at sides and not strongly emarginate opposite antennæ; surface very minutely roughened, and not strongly medially raised, median carina subobsolete; mouth opening narrow and subelliptical. Head, viewed from side, with face margin evenly curved and not strongly projecting; cheeks narrow, less than one third width of eye, slightly narrower above than below; malar space small, length little more than width of cheeks below; eye large, its outline long and very broadly elliptical. Maxillary palpi longer than anterior femora, third joint longest and somewhat thinly and slightly broadened on apical two thirds, remaining three joints slender, terete, and subequal.

Mesonotum smooth, shining, deeply impressed anteriorly along line of notauli, which are shallow posteriorly, coarsely crenulate, obsolete on middle of posterior depressed area in the center of which is a short, sharply cut, median furrow. Scutellum anteriorly with two somewhat oblique and rather narrow foveæ, the median separating carina fine and little raised, each fovea having two sharp rudiments of carina at posterior border. Metanotum obscurely reticulate-rugose, the lanceolate median area with sharply raised margins, which are angulately broken where several transverse rugæ pass entirely through the median area; just below the oval metapleural spiracle passes a sharp, complete, longitudinal, sutural carina; meta- and mesopleura smooth and shining, the latter, on posterior half, with a median, oblique, deeply impressed furrow, which has a shallower, curved continuation anteriorly, and below wing a broad, sharply depressed area, which extends downward and forward and is strongly cross striate.

Abdomen broadly sessile, longer than head and thorax to-

gether, and gradually widening to third and fourth segments; first segment very broad at base, basal width equal to three fourths of apical, the length one and one-half times the width at apex; second tergite slightly shorter than first, much wider at apex than at base, length and apical width subequal; third tergite much shorter than second and twice as wide as long; fourth, fifth, and sixth tergites subequal in length, together slightly shorter than third and successively narrower, seventh tergite very short, its hind margin slightly incurved, subangulate point of eighth a little exposed; all tergites coarsely, longitudinally striate, apically punctate-striate, the first two with a delicate median carina, the sculpturing on sixth obsolete apically; the second to fifth sutures strongly depressed and very coarsely crenulate.

Stigma large, about five times as long as broad, broadest and subangulate at two fifths of length from base, at insertion of radius; first abscissa of radius less than half length of second; second cubital cell about twice as long as wide, first transverse cubital very oblique, second slightly so and decolored; recurrent vein joining cubitus a little before first transverse cubitus, the intervening vein decolored; parallel vein inserted at lower third; submedian cell considerably longer than median.

PALAWAN, Puerto Princesa (*Baker*).

Rhogas (*Aleiodes*) *benguetensis* sp. nov.

Head (except cheeks), thorax, and legs stramineous; abdomen, cheeks, and antennæ sordid ferruginous, the last paler basally, excepting scape; upper border of propleura narrowly brownish; hind tibiae brownish at extreme base. Wings very faintly smoky, basal vein and apical half of stigma darker.

Male, length, 4.5 millimeters

Head viewed from above transverse, with large, strongly rounded eyes, the distance between them equal to the distance from occipital carina to antennal sockets; vertex with a short outer border to each ocellus sharply depressed; its surface entirely, minutely roughened; vertex strongly narrowed back of eyes, the occipital carina rather short and strongly incurved; length of vertex back of ocelli less than length of exposed cheek margin and about half length of ocellar area; ocelli very large and well separated, distance from ocelli to eyes subequal to interocellar distance and two thirds the long diameter of an ocellus, anterior ocellus slightly farther removed.

Face to mouth longer than wide, considerably wider above,

due to the emargination of the eyes, entirely, transversely rugose, less distinctly so along the median prominence, clypeus nearly smooth; mouth opening small, narrow, subcircular; clypeus small and narrow, basal suture high and narrowly arched; clypeal pits large, distant from eyes about three times their diameter. Head viewed from side with face margin outcurved just below antennæ, then straight to depressed clypeus; cheek narrow, one third width of eye, outer margin parallel with eye margin; malar space large, its length twice the width of cheek; eyes large, subelliptical. Maxillary palpi barely reaching tegulæ, slender, terete; third and fourth joints longest, subequal, and each equaling fifth and sixth together; labial palpi short, rather stout, last three joints subequal in length.

Antennæ subequal to entire body in length; scape very short and thick, scarcely longer than width at widest part and little narrowed proximad; funicle stout, more than half length of scape; middle flagellar joints about twice as long as wide.

Mesonotum not distinctly trilobed, though long at middle, notauli superficial and fine, straight and rather widely separated posteriorly; surface of mesonotum rugulose-shagreened, posterior median area plane and rugose. Scutellum anteriorly bifoveate, foveæ separated by a high, sharp, median carina, each fovea crossed by several low longitudinal carinæ; disk of scutellum shagreened. Metanotum coarsely, irregularly rugose and shagreened between the rugæ, with a strong, entire, straight, median carina; metapleura shagreened on disk, strongly rugose toward borders; spiracle small and circular and with a fine, sinuous, longitudinal, sutural carina passing beneath it; mesopleura shallowly rugose and shagreened, near anterior border with a broad, shallow, vertical depression, entire posterior half suddenly, strongly depressed, this depressed area medially with a series of about five very strong oblique rugæ, which are angulated at middle.

Abdomen little longer than head and thorax together, sessile, subelliptical in outline, slightly broader apically, with four tergites and a part of fifth exposed, first four strongly sculptured, fifth more finely and differently sculptured; first tergite rapidly broadening caudad, its length subequal to apical width, its basal width little greater than half apical width; second tergite very broad, a little shorter than first, length little more than half apical width; third tergite broadest, three fourths length of second, its length much less than half apical width; fourth longer, but narrower than third; first to third tergites coarsely, longitudinally striate and completely, medially carinate, the striæ

finer on third tergite; fourth tergite, excepting posterior border, finely rugose; a narrowly rounded point only of fifth tergite visible from above; second suture subconnate and shallow but sharp, remaining sutures normal.

Stigma small, its length about four times its width, radius inserted about two fifths from base; first abscissa of radius about half length of second; second cubital cell about twice as long as wide, slightly narrowed apically; both transverse cubiti a little oblique, the first more so, the second decolored; recurrent vein entering first cubital cell a distance from apex little less than length of first abscissa of radius, intervening vein decolored; parallel vein inserted at lower fifth and suddenly, strongly curved before insertion; submedian cell far longer than median; radial vein in hind wing obsolete; nervellus straight and slightly oblique.

LUZON, Benguet, Baguio (*Baker*).

This well-marked species is unique in the structure of its mesopleura.

Rhogas (Aleiodes) lateralis sp. nov.

Stramineous; antennae pale piceous, a narrow piceo-ferruginous stripe extending from anterior portion of pronotum across propleura, beneath wings, to hind border of metanotum, continued along lateral border of first tergite and forming spots on lateral borders of second and third tergites; ovipositor sheath piceous and but slightly exceeding abdomen. Wings very faintly smoky, the veins darker, basal third of stigma decolored.

Female, length, 3.5 millimeters.

Head viewed from above thick and short-transverse with large prominent eyes, distance between eyes equal to distance from occipital carina to anterior ocellus; of vertex opaque and shagreened, strongly narrowed back of eyes, occipital carina medially angulate; length of vertex back of ocelli half again greater than length of exposed cheek margin and as long as entire ocellar area; ocelli of medium size and separated rather more widely than usual, distance from ocelli to eyes less than interocellar distance and less than long diameter of an ocellus; distance between hind ocelli equal to long diameter of an ocellus, anterior ocellus slightly farther removed.

Face to mouth longer than wide, as wide below as above, eye margins not strongly incurved below, with a short sharp carina just below antennae, the entire surface shagreened; mouth opening very small, narrow, and subcircular; clypeus very narrow, basal suture very highly arched, making the length subequal

to width; clypeal pits small, distant from eyes about five times their diameter. Mandibles very short, swollen at base, outwardly roughened. Head viewed from side with face margin slightly elevated below antennæ, then straight to the nearly plane clypeus; cheek very narrow, one fourth width of eye, outer margin parallel with eye margin; malar space large, its length one and one-half times the width of cheek; eye very large, broadly elliptical, slightly narrower on lower fourth. Maxillary palpi reaching tegulæ, slender and terete.

Antennæ subequal in length to entire body; scape short and thick, length somewhat greater than width at widest part, and slightly narrowed proximad; funicle little more than half length and width of scape; middle flagellar joints about twice as long as wide.

Mesonotum obscurely trilobed, though long at middle, notauli very superficial, broad, and obscurely crenulate, rather widely separated posteriorly; surface of mesonotum shagreened, posterior median area plane and rugulose. Scutellar foveæ apparently three, the median carina nearly obsolete, but with two distinct lateral carinæ, thus forming one small median and two larger lateral foveæ; disk of scutellum shagreened. Metanotum coarsely, but shallowly, rugose and with a complete, but rather weak, median carina; disk of metapleura anteriorly shagreened, posteriorly rugose; mesopleura radiately rugose from above, and anteriorly with spiracle subcircular and with a continuous, sinuous, longitudinal, sutural carina passing beneath it; an irregular sternopleural carina, a small area on disk below and posteriorly shagreened, but disk entirely without distinct groove or depression.

Abdomen about as long as head and thorax together, broadly sessile, broadened to third segment, remaining three visible segments very rapidly shorter and narrower and smooth and shining; first tergite rapidly broadened apically, length and apical width subequal, basal width more than half the apical width; second tergite slightly longer than first, its length little less than apical width; third tergite about three fourths as long as second, its length about half apical width; first and second tergites strongly, longitudinally striate, third less strongly so and apically with the striæ strongly curved toward lateral margin, median apical border smooth; a median carina on first and second tergites and on basal two thirds of third tergite; second suture shallow, curved, and completely carinate, the striæ continuous across it; remaining sutures normal.

Stigma large and triangular, its length about three times

its width, radius inserted at about the middle; first abscissa of radius less than half the length of second; second cubital cell about twice as long as wide, rather strongly narrowed apically and rather suddenly so just before apex; first transverse cubitus oblique, second perpendicular and decolored; recurrent vein entering first cubital cell a distance from apex equal to first abscissa of radius, intervening vein decolored; parallel vein inserted at lower fifth and broadly curved before insertion; submedian cell far longer than median; radial vein in hind wing obsolete; nervellus curved and oblique.

LUZON, Laguna, Mount Maquiling (*Baker*).

Rhogas (*Aleiodes*) *subquadratus* sp. nov.

Ferruginous; basal half of abdomen, legs, and palpi stramineous; antennæ piceous at tips. Wings faintly smoky, stigma and veins darker, basal vein still darker.

Male, length, 4 millimeters.

Head viewed from above transverse, eyes large and prominent, distance between them equal to the distance from occipital carina to antennal sockets; vertex opaque and shagreened, not strongly narrowed back of eyes, occipital carina evenly incurved; length of vertex back of ocelli less than length of the strongly rounded, exposed cheek margin and about half length of entire ocellar area; ocelli large and well separated, distance from ocelli to eyes less than interocellar distance and less than long diameter of an ocellus; distance between hind ocelli equal to long diameter of an ocellus, anterior ocellus slightly farther removed.

Face to mouth short, about as long as wide, eye margins below not strongly incurved, with a short, sharp carina just below antennæ, the entire surface shagreened; mouth opening narrow and subcircular; clypeus broad, basal suture broadly arched, making the length about half the width; clypeal pits small, distant from eyes about five times their diameter. Head viewed from side with face margin prominent below antennæ, then straight to mouth; cheek narrow, broader above than below, where it is one fourth the width of the eye; malar space of medium size, about as long as upper cheek width; eye very large, broadly elliptical, somewhat narrowed on lower fourth. Maxillary palpi slender, terete, not reaching tegulæ; third and fourth joints subequal, fifth and sixth subequal and a little shorter than fourth.

Antennæ subequal to entire body in length; scape rather slender, strongly narrowed apically, the length one and one-half times the width at widest part; funicle slender, half the

length of scape, its length one and one-half times its width; middle flagellar joints a little less than twice as long as wide.

Mesonotum obscurely trilobed, middle lobe rather short, notauli superficial, but more strongly impressed anteriorly and not widely separated posteriorly; surface of mesonotum rugulose-shagreened, posterior median area plane and strongly rugose. Scutellum anteriorly with six foveæ, separated by low, but equally distinct carinæ; posterior disk of scutellum shagreened. Metanotum very coarsely and heavily rugose and with a straight, entire, median carina; disk of metapleura entirely, coarsely rugose; spiracle circular and with an irregularly sinuous, longitudinal, sutural carina passing beneath it; disk of mesopleura and the lower border shagreened, broad anterior margin and median area rugose and passing posteriorly into a longitudinal depression.

Abdomen about as long as head and thorax together, very broadly sessile, broadened to third segment, remaining segments, extended, as long as second and third segments together, smooth and shining and a little obscurely shagreened; first tergite very short, length two thirds of apical width, basal width subequal to length; second tergite slightly shorter than first, nearly rectangular, length half apical width; third tergite nearly as long as second, its length a little less than half apical width; first and second tergites coarsely and very straight striate, some of the median striæ on first tergite converging apically; third tergite more weakly striate on basal two thirds, apical third shagreened and shining; a strong, complete median carina on first and second tergites; second suture but slightly impressed, straight, broad, and completely connate, the striæ continuous across it; remaining sutures normal.

Stigma very large, short, broad, and subtriangular, its width about half its length, radius inserted at middle; first abscissa of radius a little more than half length of second; second cubital cell one and two-thirds times as long as broad, very slightly narrowed apically; first transverse cubitus oblique, second perpendicular and decolored; recurrent vein entering first cubital cell a distance from apex a little less than length of first abscissa of radius, intervening vein decolored; parallel vein inserted at lower fifth and suddenly curved just below insertion; submedian cell far longer than median; radial vein in hind wings subobsolete, rudiment at middle slightly curved toward costa; nervellus straight and slightly oblique.

PALAWAN, Puerto Princesa (*Baker*).

Rhogas (*Aleiodes*) *bicolor* sp. nov.

Ferruginous, hind tibiae and tarsi darker; antennae, metanotum, and a large part of first three tergites (excepting a median spot on second) piceous. Wings rather strongly suffused with a smoky tinge, veins dark-colored, basal third of stigma pale.

Male, length, 5.75 millimeters.

Head viewed from above transverse, broad behind the eyes; eyes of medium size, distance between them about equal to the distance from occipital carina to anterior ocellus; vertex opaque and shagreened; occipital carina rather suddenly incurved at middle; length of vertex back of ocelli distinctly greater than length of the oblique exposed cheek margin and slightly greater than the length of entire ocellar area; ocelli large, rather close, distance from ocelli to eyes slightly more than interocellar distance, but less than long diameter of an ocellus; distance between hind ocelli much less than long diameter of an ocellus; anterior ocellus slightly farther removed.

Face to mouth about as long as wide, eye margins below not strongly incurved, very shortly, medially, umbo-carinate just below antennae, surface shagreened and shallowly, transversely wrinkled above; mouth opening subelliptical and small; clypeus large, strongly swollen, basal suture highly arched, length and width subequal; clypeal pits small, distant from eyes about five times their diameter. Head viewed from side with face sharply prominent below antennae, and clypeus very prominent; cheek broad, a little less than half the diameter of eye, throughout most of its length with outer margin parallel to eye margin; malar space rather small, about as long as width of cheek; eye large, broadly subelliptical, slightly broader on lower half. Maxillary palpi slender, terete, not reaching tegulae; third and fourth joints subequal; fifth and sixth subequal and shorter than fourth.

Antennae subequal to entire body in length; scape broad, not at all narrowed apically, its length about one and one-half times the width at apex; funicle very short and broad, less than half length of scape; length of middle flagellar joints about one and one-half times the width.

Mesonotum obscurely trilobed, middle lobe short, notauli shallow anteriorly, but deep, broad; and strongly converging posteriorly; surface shagreened, lateral lobes posteriorly, obscurely, transversely rugulose, posterior median area plane and strongly rugose. Scutellum anteriorly with six small equal foveae, the low separating carinae not complete anteriorly;

posterior disk of scutellum shagreened. Metanotum very coarsely and heavily rugose and with a strong and continuous, but irregular median carina; disk of metapleura shagreened; spiracle circular and with a fine, nearly straight, longitudinal sutural carina passing beneath it; disk of mesopleura posteriorly shagreened, anteriorly rugose, and medially a little depressed, this depression is continued posteriorly in two widely diverging impressed lines.

Abdomen about as long as head and thorax together, broadly sessile, broadened to third segment; remaining segments, extended, as long as second and third together, smooth, obscurely shagreened, and shining; first tergite longer than its apical width, basal width a little greater than one half of apical width; second tergite about as long as first, slightly broadened apically, length subequal to apical width; third tergite about two thirds the length of second and subequal to one half the apical width; first and second tergites coarsely and very straight striate, some of the median striæ on first tergite converging apically; third tergite more weakly striate on basal two thirds, apical third shagreened and shining; a strong, complete median carina on first and second tergites and on basal two thirds of third tergite; second suture broadly and strongly impressed, curved, and completely connate, the striæ continuous across it; remaining sutures normal.

Stigma of medium size, its length about five times its width, radius inserted at two fifths of the length from base; first abscissa of radius two thirds length of second; second cubital cell one and two-thirds times as long as broad, gradually narrowed apically; first transverse cubitus slightly oblique, second perpendicular, both decolored; recurrent vein entering first cubital cell a distance from apex a little less than length of first abscissa of radius, but equaling second transverse cubitus, intervening vein decolored; parallel vein inserted at lower fifth and broadly curved before insertion; submedian cell far longer than median; radial vein in hind wings subobsolete and straight, nervellus nearly vertical and curved.

LUZON, Benguet, Baguio (*Baker*).

Rhogas melanosoma Ashmead.

Rhogas melanosoma ASHMEAD, Proc. U. S. Nat. Mus. (1905), 28, 970.

Male.—Length 4.5 mm. Head and thorax brownish yellow, the ocelli pale and placed on a black spot, the eyes black; the antennæ, except the first two joints, a spot at apex of the middle and hind femora, more or less of the base and apex of the hind tibiae, the hind tarsi, and the whole dorsum of the abdomen, are black. The abdomen is rugulose, the first, second,

and third segments with a median longitudinal carina, that on the third subobsolete. Wings hyaline, the stigma and veins brown.

Type.—Cat. No. 8321, U.S.N.M.

Manila. (Father Brown.)

This species will remain unrecognizable until it has been properly described. Its present position among the known species is purely conjectural. Coloration alone does not furnish safe diagnostic characters in this genus, especially in the subgenus *Aleiodes*, to which this species may pertain.

Rhogas (Aleiodes) mimicus sp. nov.

Stramineous; antennæ ferruginous, darker apically; upper borders of pro- and mesopleuræ piceous; abdomen ferruginous, with broad lateral borders of basal half of first segment piceous.

Male, length, 3.5 millimeters.

Head viewed from above transverse, strongly narrowed behind eyes; eyes large and prominent, distance between them about equal to distance from occipital carina to antennal sockets; vertex opaque and shagreened; occipital carina angulate at middle; length of vertex back of ocelli greater than length of the oblique, exposed cheek margin and subequal to length of entire ocellar area; ocelli of medium size, distance from ocelli to eyes somewhat greater than interocellar distance and subequal to the long diameter of an ocellus; distance between posterior ocelli much less than the long diameter of an ocellus, anterior ocellus distinctly farther removed.

Face to mouth a little longer than wide, eye margins below more strongly retreating than above, surface shagreened and slightly elevated medially; mouth opening small, subcircular; clypeus narrow, a little swollen, basal suture highly arched, its length slightly greater than its width; clypeal pits distant from eyes about four times their diameter. Head viewed from side with face above and clypeus very slightly prominent; cheek narrow, about one fourth diameter of eye, its outer margin parallel to eye margin; malar space rather small, its length greater than width of cheek; eye large, broadly subelliptical, slightly broader on lower half. Maxillary palpi slender, terete, not reaching tegulæ; third and fourth joints subequal, fifth and sixth subequal and shorter than fourth.

Antennæ distinctly longer than body, scape short and very broad apically, length but slightly greater than apical width; funicle more than half length of scape and strongly narrowed apically; length of middle flagellar joints three times the width.

Mesonotum scarcely trilobate, middle lobe narrowly, but not

greatly, extended cephalad, notauli very shallow and not strongly converging posteriorly; surface shagreened, posterior median area plane and rugulose. Scutellum anteriorly with six small foveæ, median carina much stronger than the others; posterior disk of scutellum shagreened. Metanotum shallowly rugose and with a strong complete median carina; disk of metapleura rugose; spiracle ovate and with an unusually straight, longitudinal, sutural carina passing beneath it; disk of mesopleura irregularly rugose and with a broad, oblique, rugose depression below.

Abdomen slightly shorter than head and thorax together, sessile, broadest on second and third segments, remaining segments, extended, as long as third segment and one half of second segment together, smooth, shagreened, and shining; first tergite longer than its apical width, basal width slightly greater than half the apical; second tergite slightly shorter than first, little broadened apically, length three fourths of apical width; third tergite about three fourths the length of second, its length subequal to half its apical width; first, second, and third tergites coarsely, but shallowly and completely, longitudinally striate; second suture broadly curved, strongly and broadly impressed, and not connate; remaining sutures normal; a strong median carina on first and second tergites and on basal three fourths of third.

Stigma of medium size, its length about five times its width, radius inserted slightly before the middle; first abscissa of radius two thirds length of second; second cubital cell one and one-half times as long as broad, gradually narrowed apically; first transverse cubitus oblique, second perpendicular and decolored; recurrent vein entering first cubital cell a distance from apex a little less than length of first abscissa of radius, but equaling second transverse cubitus, intervening vein decolored; parallel vein inserted at lower fourth and broadly curved before insertion; submedian cell much longer than median; radial vein in hind wings entirely obsolete; nervellus straight, oblique, and slightly swollen at middle.

MINDANAO, Agusan, Butuan (*Baker*).

Rhogas (Aleiodes) simillimus sp. nov.

Stramineous; antennæ slightly darker apically; on each side of body a straight, narrow, piceous stripe, running from apex of pronotum to end of lateral margin of first tergite, passing beneath wings and along lateral margins of metanotum. Wings

with very slight smoky suffusion, stigma and veins very pale.

Male, length, 3.25 millimeters.

Head viewed from above rather narrow, thick transverse, strongly narrowed behind eyes; eyes large, but not prominent, distance between them equal to distance from occipital carina to front margin of ocellar area; vertex opaque, shagreened; occipital carina shallowly angulate at middle; length of vertex back of ocelli greater than length of the oblique, exposed cheek margin and slightly longer than entire ocellar area; ocelli small, distance from ocelli to eyes greater than interocellar distance and greater than long diameter of an ocellus; distance between hind ocelli slightly less than long diameter of an ocellus, anterior ocellus scarcely farther removed.

Face to mouth about as long as wide, eye margins evenly incurved, with a short raised carina just below antennæ, surface obscurely, transversely wrinkled; mouth opening rather broad and subelliptical; clypeus transverse and swollen, basal suture broadly arched, length less than width; clypeal pits distant from eyes about five times their diameter. Head viewed from side with face, above, flatly prominent and clypeus very prominent; cheek broad, nearly half width of eye, outer margin in large part parallel to eye margin; malar space rather large, its length greater than width of cheek; eye of medium size, broad, subelliptical, a little narrowed on lower fourth. Maxillary palpi slender, terete, reaching tegulæ; third and fourth joints subequal, fifth and sixth subequal and shorter than fourth.

Antennæ a little longer than entire body; scape short and very broad apically, length subequal to apical width; funicle large, more than half length of scape, narrowed apically; length of middle flagellar joints three times the width.

Mesonotum scarcely trilobate, middle lobe but little extended cephalad, notauli broad, rather strongly impressed and crenulate; surface rugulose-shagreened, posterior median area plane and rugose. Scutellum anteriorly with two large foveæ separated by a strong carina, each fovea being divided by two very rudimentary carinæ; posterior disk of scutellum shagreened. Metanotum very coarsely and strongly rugose, basally with a distinct median carina, which apically becomes lost among the heavy rugæ; disk of metapleura rugulose; spiracle circular, a very irregular and incomplete, longitudinal, sutural carina passing beneath it; mesopleura rugulose, with an oblique depression on lower half and an irregular median carina on posterior half.

Abdomen slightly shorter than head and thorax together,

sessile, broadest on third segment, remaining segments entirely retracted; first tergite longer than its apical width, basal width slightly greater than half apical; second tergite subequal to first in length, distinctly broadened apically, length subequal to apical width; third tergite but little shorter than second, its length greater than half apical width; first, second, and third tergites coarsely, but shallowly and completely, longitudinally striate; second suture broad, curved, deeply impressed, and subconnate; a strong median carina on first and second tergites and on basal half of third.

Stigma large, its length about four times its width, radius inserted at two fifths of the length from base; first abscissa of radius two thirds the length of the second; second cubital cell very short, subquadrate, about one fourth longer than broad, not narrowed apically; first transverse cubitus slightly oblique, second nearly perpendicular and decolored; recurrent vein entering first cubital cell a distance from apex equaling first abscissa of radius, intervening vein decolored; parallel vein inserted at lower fourth and broadly curved before insertion; submedian cell far longer than median; radial vein in hind wings nearly obsolete; nervellus curved and nearly vertical.

MINDANAO, Misamis, Iligan (*Baker*).

This species presents a remarkable resemblance, superficially, to *Rhogas mimicus* sp. nov., but is distinct in structural characters.

Rhogas (Aleiodes) modestus sp. nov.

Pale ferruginous; legs stramineous, all tarsi and apical half of hind femora pale ferruginous; spots on upper border of propleura, beneath wings, sides of postscutellum, and sides of first tergite at base piceous.

Female, length, 5.5 millimeters.

Head viewed from above broadly transverse, strongly narrowed behind eyes, which are large and very prominent, distance between them equaling distance from occipital carina to antennal sockets; vertex roughly and thickly shagreened; occipital carina angulate at middle; length of vertex back of ocelli much greater than the very oblique, exposed cheek margins and distinctly longer than entire ocellar area; ocelli small, distance from ocelli to eyes greater than interocellar distance, but little less than long diameter of an ocellus; distance between hind ocelli much less than long diameter of an ocellus, anterior ocellus not farther removed.

Face to mouth as wide as long, eye margins evenly incurved,

very shortly, medially, umbo-carinate below antennæ, surface transversely wrinkled; mouth opening small, subcircular; clypeus narrow, as long as wide, basal suture highly arched; clypeal pits distant from eyes five times their diameter. Head viewed from side broadly curved from antennæ to mouth, clypeus little swollen; cheek narrower above than below where it is about one third the diameter of eye; malar space large, its length nearly twice lower width of cheek; eye very large, very broadly, bluntly elliptical, a little narrower on lower half. Maxillary palpi slender, terete, reaching tegulæ; fourth joint distinctly longer than third, fifth and sixth subequal and slightly shorter than third.

Antennæ a little longer than entire body; scape broad apically, length greater than apical width; funicle very short and broad, about one half length of scape; length of middle flagellar joints one and one-half times width.

Mesonotum scarcely trilobate, middle lobe but little extended, notauli superficial, but little impressed, and quite widely separated posteriorly, surface roughly and thickly shagreened, posterior median area plane and rugose. Scutellum anteriorly with six small equal foveæ; posterior disk shagreened. Metanotum very coarsely and strongly rugose, and with a strong, straight, complete, median carina; metapleura shagreened on disk, rugose posteriorly; spiracle large and circular, with an evenly curved, longitudinal, sutural carina passing beneath it; mesopleura shagreened above and there with a vertical sharply impressed line, anteriorly and below coarsely rugose along a broad longitudinal impression.

Abdomen as long as head and thorax together, sessile, broadest on third segment, remaining segments progressively shorter and together about as long as third segment; first tergite slightly longer than its apical width; basal width a little greater than half apical; second tergite shorter than first, but little broadened apically, length slightly less than apical width; third tergite three fourths length of second, its length subequal to half apical width; first and second tergites coarsely, straight striate, third completely, but more finely so, striæ on latter apically, strongly curving toward lateral borders; remaining segments obscurely shagreened and smooth and shining; second suture straight, narrowly impressed, and connate; a strong median carina on first and second tergites and less strongly extending to two thirds of third tergite.

Stigma large, four times as long as wide, radius inserted

at middle; first abscissa of radius a little more than half length of second; second cubital cell nearly twice as long as wide, a little narrowed apically; first transverse cubitus oblique, second perpendicular and decolored; recurrent vein entering first cubital cell a distance from apex equal to three fourths the length of the first abscissa of radius; parallel vein inserted at lower fifth and curved just before insertion; submedian cell much longer than median; radial vein in hind wings almost obsolete, the rudiment straight; nervellus straight and oblique.

LUZON, Laguna, Los Baños, (*Baker*).

Rhogas (Aleiodes) separatus sp. nov.

Stramineous; antennæ, a narrow lateral stripe passing from pronotum to lateral borders of metanotum, lateral borders of first and second tergites, a spot on lateral borders of third tergite, and entire fourth tergite ferruginous. Wings faintly smoky, veins dark smoky, first abscissa of radius and basal vein darker; basal half of stigma paler.

Male, length, 4.5 millimeters.

Head viewed from above narrow and thick transverse, very strongly narrowed behind eyes, which are of medium size and prominent, distance between them a little greater than distance from occipital carina to fore margin of ocellar area; vertex opaque and thickly shagreened; occipital carina short and nearly straight; length of vertex back of ocelli subequal in length to the very long and very oblique exposed cheek margin and subequal in length to entire ocellar area; ocelli of medium size, distance from ocelli to eyes a little greater than interocellar distance and subequal to the long diameter of an ocellus; distance between hind ocelli less than long diameter of an ocellus, anterior ocellus a little farther removed.

Face to mouth longer than wide, eye margins rather strongly incurved below, a little medially elevated below antennæ, mid-lateral area depressed, surface shagreened; mouth opening small, subcircular; clypeus rather broad, nearly as long as wide, basal suture highly arched; clypeal pits distant from eyes three times their diameter. Head viewed from side with face margin nearly evenly curved from antennæ to mouth, clypeus but slightly prominent; cheek one third diameter of eye, outer margin parallel to eye margin; malar space large, its length one and one-half times the width of cheek; eye of medium size, broadly subelliptical; maxillary palpi slender, terete, not reaching tegulæ, third joint stout, fourth a little longer, third, fifth, and sixth subequal.

Antennæ a little longer than body; scape broad apically, its length but little greater than apical width; funicle very broad at base, narrowed apically, about half length of scape; length of middle flagellar joints about three times the width.

Mesonotum obscurely trilobed, middle lobe rather broadly extended, notauli broad and strongly impressed anteriorly, widely separated posteriorly, surface roughly and thickly shagreened, posterior median area plane and rugose. Scutellum anteriorly with six small foveæ, separating carinæ equally strong; posterior disk of scutellum shagreened. Metanotum shallowly, but thickly, rugose with a well-defined median carina on basal half; metapleura rugose; spiracle circular with a nearly straight, longitudinal, sutural carina passing beneath it; mesopleura rugose, below on posterior two thirds with an oblique depression in which the rugæ are stronger.

Abdomen a little longer than head and thorax together, sessile, broadest on third segment, remaining segments fully exerted, rapidly narrowing, together as long as third and one half of second; first tergite longer than its apical width, basal width two thirds of apical; second tergite about as long as first, but little broadened apically, length greater than apical width; third tergite about three fourths length of second, its length about two thirds apical width; first, second, and third tergites completely, coarsely, irregularly striate and with a complete median carina, striæ on third segment slightly diverging apically; second suture broad, straight, deeply impressed, and subconnate.

Stigma of medium size, five times as long as wide, radius inserted at middle; first abscissa of radius three fourths length of second; second cubital cell one and two-thirds times as long as wide, a little narrowed apically; first transverse cubitus oblique, second perpendicular and decolored; recurrent vein entering first cubital cell a distance from apex equal to three fourths length of first abscissa of radius and greater than length of second transverse cubitus; parallel vein inserted at lower fourth and very broadly curved before insertion; submedian cell much longer than median; radial vein in hind wings obsolete; nervellus straight and oblique.

LUZON, Laguna, Los Baños (*Baker*).

Rhogas (Aleiodes) banksi sp. nov.

Stramineous; antennæ ferruginous; on either side of body a narrow piceous stripe, passing from pronotum beneath wings, along lateral margins of metanotum and first tergite, and ending at middle of lateral borders of second tergite.

Male, length, 4.5 millimeters.

Head viewed from above transverse, broad behind the eyes, which are of medium size and prominent, distance between them equaling distance from occipital carina to fore margin of ocellar area; vertex opaque and roughly, thickly shagreened; occipital carina long, strongly incurved at middle; length of vertex back of ocelli nearly twice the length of the very short, oblique, exposed cheek margin and as long as entire ocellar area; ocelli of medium size, distance from ocelli to eyes subequal to interocellar distance and less than long diameter of an ocellus, anterior ocellus not farther removed.

Face to mouth a little longer than wide, eye margins not strongly incurved below, with a rather strong median carina extending halfway to clypeus, the surface shagreened, transversely wrinkled on upper half; mouth opening small, sub-elliptical; clypeus large, nearly as long as broad, basal suture subobsolete; clypeal pits large, distant from eyes about four times their diameter. Head viewed from side with face margin flatly prominent below antennæ, then straight to mouth, clypeus not swollen; cheek narrow, about one fourth diameter of eye, outer margin subparallel to eye margin; malar space large, its length twice the width of cheek; eye large, broadly, bluntly sub-elliptical. Maxillary palpi slender, terete, reaching tegulæ; third joint stout, fourth a little longer, fifth and sixth joints subequal and slightly shorter than third.

Antennæ as long as body; scape broadened apically, length one and one half times the apical width; funicle longer than broad and very little narrowed apically; more than one half length of scape; length of middle flagellar joints three times the width.

Mesonotum rather strongly trilobed, middle lobe broadly extended, notauli broad, deeply impressed and crenulate, but stronger posteriorly than anteriorly and posteriorly widely separated; surface finely shagreened, posterior median area plane and rugose. Scutellum anteriorly with two large foveæ, each subdivided by two low, incomplete carinæ; posterior disk of scutellum shagreened. Metanotum rather finely, shallowly rugose, with a complete median carina; disk of metapleura shagreened; spiracle ovate, with a strong, sinuous, longitudinal, sutural carina passing beneath it; disk of mesopleura shallowly rugose and with a very broad, shallow depression, extending from beneath forewings to lower posterior angle.

Abdomen as long as head and thorax together, broadest on

third segment, remaining segments exerted and together as long as second segment; first tergite longer than its apical width, basal width two thirds of apical; second tergite a little shorter than first, a little broadened apically, length subequal to apical width; third tergite nearly three fourths length of second, its length two thirds of apical width; first, second, and third tergites completely, coarsely, straight striate and with a complete median carina, striæ on second and third tergites slightly diverging caudad; second suture curved, gradually impressed, and subconnate.

Stigma of medium size, five times as long as wide, radius inserted at two fifths of the length from base; first abscissa of radius three fourths length of second; second cubital cell nearly twice as long as wide, narrowed apically; first transverse cubitus oblique, second nearly perpendicular and decolored; recurrent vein entering first cubital cell a distance from apex equal to three fourths length of first abscissa of radius and subequal to second transverse cubitus; parallel vein inserted at lower fifth and curved just before insertion; submedian cell far longer than median; radius in hind wings obsolete; nervellus straight and nearly vertical.

LUZON, Laguna, Mount Maquiling (*Baker*).

Named for Charles S. Banks, associate professor of entomology in the College of Agriculture, Los Baños, P. I., formerly entomologist in the Bureau of Science, in Manila.

Subgenus *Rhogas* Nees

Synopsis of the species.

*a*¹. Median lobe of mesonotum with an evident, though weak, median carina; submedian cell exceeding median by the length of the transverse median vein.

*b*¹. Median lobe of mesonotum shagreened and sparsely punctate; third abdominal tergite striate only at base and with a very short median carina; hind tibial spurs unusually long in the female.

*b*¹. Median lobe of mesonotum thickly punctate; third tergite striate throughout and without a discernible median carina.

sanchezi sp. nov.

*a*¹. Median lobe of mesonotum without median carina and finely, thickly, irregularly, roughly wrinkled; third tergite sculptured and carinate to three fourths of its length; submedian cell exceeding median by much more than the length of the transverse median vein.

luzonensis sp. nov.

Rhogas (*Rhogas*) *brownii* sp. nov.

Black; first tergite, broad basal portion of second tergite,

fore and mid coxæ, fore and mid femora except tips, hind coxæ, and basal half of hind femora bright ferruginous; fore and mid tibiæ and tarsi piceous; basal third of hind tibiæ and hind tarsi, excepting last joint, whitish; antennæ black with a narrow whitish band following middle; wings faintly smoky, veins brown, a yellowish mark at costal end of basal vein; ovipositor very short, little exceeding apex of abdomen; hypopygium small and shallow.

Female, length, 8 millimeters.

Head viewed from above broadly transverse, strongly narrowed back of eyes, which large and prominent, distance between eyes subequal to distance from occipital carina to antennal sockets; entire surface closely, coarsely rugose; ocellar area laterally bordered by a very short crenulate groove; occipital carina very strongly incurved at middle; length of vertex back of ocelli less than length of the strongly oblique, exposed cheek margin and subequal to length of entire ocellar area; ocelli small, distance from ocelli to eyes greater than interocellar distance and one and one-half times the long diameter of an ocellus, anterior ocellus farther removed.

Face to mouth broader than long, strongly, coarsely, transversely wrinkled throughout (excepting clypeus), with a strong, elevated median carina on basal half; mouth opening large and subcircular; clypeus large, coarsely punctate, broader than long, basal suture broadly curved and strongly impressed; clypeal pits distant from eyes about four times their diameter. Head viewed from side with face margin strongly prominent below antennæ for half its length, clypeus suddenly and strongly prominent; cheek coarsely, transversely wrinkled, very broad, much broader below than above, width at middle about half width of eye; malar space of large size, its length greater than lower width of cheek; eye of medium size, elliptical. Maxillary palpi slender, terete, nearly reaching tegulæ; fourth joint longest, basal joint piceous, remainder stramineous.

Antennæ about as long as entire body; scape broad throughout, suddenly narrowed at base, length one and one-half times apical width; funicle about half length of scape and narrowed to apex; middle flagellar joints about one and one-half times as long as wide.

Mesonotum trilobed, middle lobe broadly extended with a low, but clearly defined, median carina; surface shagreened and sparsely punctate, notauli very strong and deep, crenulate, strongly converging posteriorly, where they are outwardly mar-

gined by a crenulated furrow, which continues laterally along hind margin of mesonotum; posterior median area with a few low, irregular, longitudinal rugæ, which leave two lateral, irregular, elongate, shallow foveæ. Metanotum very strongly, coarsely, and irregularly reticulate-rugose and with a complete, but wavy, median carina; metapleura punctate-rugose; spiracle large, circular, and with a very sinuous, longitudinal, sutural carina passing below it; mesopleura rugose, with a large median area smooth, shining, very sparsely punctate, and crossed obliquely from behind forward and downward by a shallow depression.

Abdomen broadly sessile, slightly longer than head and thorax together, widest at apex of second segment, fourth and following segments but little exerted, together shorter than third segment; first tergite with length greater than apical width, basal width two thirds of apical; second tergite as long as first, little widening apically, sides straight, length subequal to apical width, without depressions along basal border; third tergite about three fourths length of second and slightly narrowed; remaining tergites rapidly narrower and smooth and shining; first and second tergites very coarsely, strongly, irregularly, longitudinally rugose, basal half of third tergite more finely so, apical half of third shining, sparsely punctate, and obsoletely shagreened; first and second tergites with a very strong median carina, a weaker carina on basal third of third tergite; second suture straight, broadly depressed, crenulate, and subconnate.

Stigma large, about five times as long as wide, radius inserted near the middle; first abscissa of radius about half length of second; second cubital cell about one and one-half times as long as wide, slightly narrowed apically; first transverse cubitus a little oblique, second perpendicular; recurrent vein inserted in first cubital cell a distance from apex about equaling first abscissa of radius, intervening vein somewhat swollen; parallel vein inserted at lower sixth, broadly curved before insertion; submedian cell exceeding median by the length of the oblique, transverse median vein; radius in hind wings weak, straight; nervellus curved and a little oblique.

LUZON, Laguna, Mount Banahao (*Baker*).

The male of this species is slightly smaller than the female; the second tergite is all black, and there is a black spot at the center of the first tergite. The hind tibial spurs are shorter than in the female.

This species is named for Rev. Robert Brown, S. J., formerly

connected with the Weather Bureau in Manila, and who did pioneer work on the hymenopterous parasites of the Philippines.

Rhogas (Rhogas) sanchezi sp. nov.

Black; first tergite, narrow basal portion of second tergite, fore and middle legs, hind coxæ, and basal half of hind femora ferruginous; hind tibiæ piceous, pale at base; hind tarsi whitish, except last joint. Antennæ black, a narrow white band at middle. Wings faintly smoky, veins brownish.

Male, length, 5.5 millimeters.

Head viewed from above thick transverse, narrowed back of eyes, which are large and prominent, distance between eyes subequal to distance from occipital carina to antennal sockets; entire surface punctate-rugose, the rugæ carried forward between eyes and ocelli; ocellar area bordered by a narrow, complete, impressed groove, which is broader and crenulate at the sides; occipital carina broadly incurved; length of vertex back of ocelli slightly less than length of entire ocellar area; ocelli small, distance from ocelli to eyes much greater than interocellar distance and little greater than long diameter of an ocellus, anterior ocellus farther removed.

Face to mouth broader than long, strongly, coarsely, transversely wrinkled throughout (excepting clypeus), with a strong, elevated, median carina on basal half; mouth opening large, subcircular; clypeus large, coarsely punctate, broader than long, basal suture broadly curved and strongly impressed; clypeal pits distant from eyes four times their diameter. Head viewed from side with face margin broadly curved above, clypeus slightly prominent; cheek closely, finely wrinkled above, punctate below, very broad, much broader below than above, width at middle about half width of eye; malar space large, its length greater than lower width of cheek; eye of medium size, elliptical. Maxillary palpi with third and fourth joints stouter and piceous, the latter being the longest.

Antennæ about as long as entire body; scape broad throughout, length one and one-half times apical width; funicle about half length of scape, narrowed apically; length of middle flagellar joints one and one-half times the width.

Mesonotum trilobed, middle lobe very broadly extended and with a very weak median carina, surface thickly, roughly punctate, lateral lobes more sparsely punctate and shagreened, notauli very strong and deep, crenulate, strongly converging posteriorly, where they are outwardly margined by a crenulated furrow, which continues laterally along hind margin of mesonotum; pos-

terior median area plane and coarsely rugose. Scutellum anteriorly with two large foveæ, separated by a sharp carina, each fovea within having several low irregular rugæ; posterior disk of scutellum punctate. Metanotum very strongly, coarsely, irregularly rugose, and with a nearly straight, complete, median carina; disk of metapleura coarsely punctate, behind coarsely rugose; spiracle subcircular and with a sinuous, longitudinal, sutural carina passing beneath it; mesopleura very coarsely, irregularly rugose anteriorly, posteriorly shining, sparsely punctate, and with an oblique, shallow depression, passing downward and forward.

Abdomen broadly sessile, slightly longer than head and thorax together, widest at apex of second segment, fourth and following segments but very little exserted, together shorter than third segment; length of first tergite greater than its apical width, basal width two thirds of apical; second tergite as long as first, little widening apically, sides straight, length subequal to apical width, without depressions along basal border; third tergite about three fourths length of second and slightly narrower; remaining tergites very rapidly narrower and smooth and shining; first and second tergites very coarsely, strongly, irregularly, longitudinally striate, third tergite finely, thickly, and completely striate; first and second tergites with a strong, straight, median carina, but no carina discernible on third; second suture narrow, sharply impressed, minutely crenulate, and subconnate.

Stigma large, about five times as long as wide, radius inserted at two fifths of length from base; first abscissa of radius about one third length of second; second cubital cell about one and one-half times as long as wide, slightly narrowed apically; first transverse cubitus a little oblique, second very slightly oblique; recurrent vein inserted in first cubital cell a distance from apex a little less than length of first abscissa of radius and about half the length of second transverse cubital, intervening vein not swollen; parallel vein inserted at lower third, broadly curved before insertion; submedian cell exceeding median by the length of the oblique transverse median vein; radius in hind wings very weak and straight; nervellus curved and a little oblique.

LUZON, Laguna, Mount Maquiling (*Baker*).

This species is very close to *Rhogas brownii* sp. nov. in general appearance, but is distinct in various important structural characters.

Named for Rev. Francisco de P. Sanchez, S. J., of the Ateneo de Manila, who came to the Philippine Islands fifty years ago and is still an enthusiastic naturalist.

Rhogas (*Rhogas*) *luzonensis* sp. nov.

Black; head below eyes, narrow complete orbits, apex of metathorax, first two segments of abdomen, and legs (paler apically) ferruginous; basal third of antennæ piceous, remainder much paler. Wings quite distinctly suffused with a smoky tinge, veins brownish, darker on basal half of wing, the basal third of stigma paler. Hypopygium small and shallow; ovipositor but little exceeding apex of abdomen.

Female, length, 7 millimeters.

Head viewed from above thick transverse, narrowed back of eyes, eyes large and prominent, distance between them equal to the distance from occipital carina to anterior ocellus; surface anteriorly shagreened, posteriorly becoming transversely, rough wrinkled; ocellar area bordered laterally by a short, narrow, impressed groove; occipital carina a little incurved at middle; length of vertex back of ocelli greater than length of entire ocellar area; ocelli small, distance from ocelli to eyes subequal to interocellar distance and less than the long diameter of an ocellus, anterior ocellus not farther removed.

Face to mouth broader than long, transversely, reticulately wrinkled (clypeus smoother), with a strong, elevated, median carina, extending three fourths of length; mouth opening small, subcircular; clypeus large, much broader than long, basal suture broadly curved and sharply impressed; clypeal pits distant from eyes five times their diameter. Head viewed from side with face margin broadly curved above, clypeus a little prominent; cheek roughly shagreened, very broad, at middle half the diameter of eye; malar space very large, its length greater than lower width of cheek; eye of medium size, broadly elliptical. Maxillary palpi stramineous, with third joint stouter and slightly longer than fourth, fifth joint distinctly longer than sixth.

Antennæ about as long as entire body, the scape broad at apex, its length about one and one-half times the width at apex; funicle about half as long as the scape, little narrowed apically; length of middle flagellar joints about one and one-half times the width.

Mesonotum trilobed, middle lobe broadly extended, without median carina, surface finely, thickly, irregularly, roughly wrinkled throughout; notauli broad, strongly impressed, and strongly converging posteriorly; posterior median area plane and rugose. Scutellum anteriorly with four foveæ, the two outer larger, separated by high and equally strong carinæ; posterior disk of scutellum shagreened. Metanotum coarsely, shallowly,

irregularly rugose and with a strong and complete, but very wavy, median carina; disk of metapleura anteriorly, roughly shagreened, posteriorly rugose; spiracle subcircular, the sinuous longitudinal, sutural carina passing beneath it; mesopleura rugose throughout and with a sharply and deeply impressed line extending downward from middle of hind margin.

Abdomen broadly sessile, slightly longer than head and thorax together, widest at apex of second segment, fourth and following segments but little exserted, together about as long as third segment; first tergite with length greater than apical width, basal width two thirds of apical; second tergite as long as first, nearly rectangular, sides straight, length greater than apical width, without depressions along basal border; third tergite about three fourths length of second and nearly as broad; remaining tergites very rapidly narrower, smooth and shining; first and second tergites coarsely, strongly, longitudinally, straight striate, third tergite more finely and thickly striate, the striae running out at three fourths of length and succeeded by a rough shagreening; first and second tergites with a strong median carina, weaker on third tergite, and extending to three fourths of its length; second suture slightly curved, broadly, deeply impressed at middle, narrow and little impressed at side, subconnate.

Stigma large, four times as long as wide, radius inserted at middle; first abscissa of radius about three fourths length of second; second cubital cell about one and two-thirds times as long as wide, slightly narrowed apically; first transverse cubitus slightly oblique, second perpendicular; recurrent vein inserted in first cubital cell a distance from apex slightly shorter than first abscissa of radius, but as long as first transverse cubitus, intervening vein not swollen; parallel vein inserted at lower fifth and broadly curved before insertion; submedian cell exceeding median by much more than the length of the oblique, transverse median vein; radius in hind wings straight and very weak; nervellus curved and a little oblique.

LUZON, Laguna, Mount Maquiling (*Baker*).

A male from Baguio, Benguet, is slightly smaller than the female, but otherwise agrees very closely throughout.

Subgenus *Aleirhogas novum*

Synopsis of the species.

- α^1 . Vertex, caudad of ocelli, finely roughened, but never coarsely transversely striate; first transverse cubital vein slightly oblique or perpendicular; small, pale species.

- b*¹. Notauli anteriorly very shallow and indistinct; first abdominal tergite as broad as long and little narrowed to base; submedian cell but little longer than median; ferruginous..... *ferruginosus* sp. nov.
- b*². Notauli anteriorly deep and strong; first abdominal tergite longer than broad and more strongly narrowed to the base; submedian cell far longer than median; ferruginous, dorsum of abdomen piceous, except disk of second tergite and parts of disk of first and third tergites *montanus* sp. nov.
- a*¹. Vertex, caudad of ocelli, coarsely transversely striate; first transverse cubital strongly oblique; larger, more deeply colored species.
- c*¹. Antennæ much longer than entire body, flagellar joints about three times as long as wide; width between eyes less than length of head as seen from above; second abdominal suture completely connate, striæ continuous across it; body largely ferruginous, legs concolorous; palpi stramineous.
- d*¹. Distance from ocelli to eyes nearly four times interocellar distance; notauli obsolete posteriorly, metanotal carina nearly complete; median carina on abdomen extending on to base of third tergite; abdomen concolorous *exceptus* sp. nov.
- d*². Distance from ocelli to eyes about twice interocellar distance; notauli distinct throughout; metanotal carina distinct only near base; median carina of abdomen extending on to base of fourth tergite; abdominal dorsum medially black..... *oculatus* sp. nov.
- c*². Antennæ shorter than entire body; width between eyes greater than length of head as seen from above; second abdominal suture impressed and not completely connate, striæ not continuous across it; body more deeply ferruginous, abdomen partly or wholly black or piceous; legs dark; palpi piceous; metanotum sometimes black.
- schultzei* sp. nov.

Rhogas (*Aleirhogas*) *ferruginosus* sp. nov.

Pale ferruginous, the legs paler, antennæ darker apically; costa basally ochraceous, stigma stramineous, its lower border and the veins dark smoky; interocellar area piceous.

Male, length, 4 millimeters.

Head viewed from above with eyes small and little bulging, distance between them subequal to length of head; vertex strongly convex, its entire surface minutely, irregularly wrinkled and shagreened; length of vertex back of ocelli subequal to length of exposed cheek margin and to length of entire ocellar area; distance of ocelli from eyes one and a half times interocellar distance and nearly twice the short diameter of an ocellus; posterior ocelli separated by a distance equaling long diameter of an ocellus, anterior ocellus slightly farther removed; occipital margin gently incurved. Face subquadrate, broader than long, finely transversely wrinkled, with a slight median elevation below antennæ; mouth opening very small, subcircular; clypeus very narrow, basal suture arched and impressed; clypeal pits distant from eyes five times their diameter. Head viewed from

side with face margin strongly projecting, especially at antennæ, flat at middle; disk of clypeus prominent; cheeks very broad, upper width about one half upper eye diameter; malar space very large, its length two thirds length of eye and greater than lower width of cheek; eye rather small, subelliptical, narrower below. Maxillary palpi short, not reaching tegulæ, third joint shorter than fourth, the latter not as long as fifth and sixth together; labial palpi very short, the joints thick.

Antennæ about as long as entire body, the scape very short and thick, narrowed to base, apical width nearly equaling length, funicle narrower than scape and two thirds its length, strongly narrowed apically; flagellar joints about as long as wide.

Mesonotum with a mere indication of trilobing, surface quite evenly convex; notauli superficial and weak, converging to separated points on hind margin; surface minutely wrinkled and shagreened, median basal area slightly depressed and rugose. Scutellum bifoveate anteriorly, foveæ short and broad and separated by a high, sharp carina, each fovea within having several weak longitudinal rugæ; posterior disk of scutellum with concave sides and very blunt apex, its surface shagreened. Metanotum closely irregularly reticulate-rugose and with a strong and complete median carina; metapleura finely rugose throughout; spiracle small, circular, and with a straight, complete, longitudinal carina passing beneath it; mesopleura finely rugose or wrinkled, a large shining area below hind wings, and near lower margin of disk a broadly impressed, shallow, slightly oblique groove.

Abdomen as long as head and thorax together, broadly sessile, with four fully exposed segments, second and third being broad and parallel-sided; first segment broad and thick at base and near insertion abruptly elevated in two short, oblique discal ridges, length a little less than apical width, entire basal width more than half of apical; second tergite as long as first, subquadrate, its length three fourths the apical width, narrowly depressed along basal border; third tergite as wide and three fourths length of second; fourth narrower and shorter than third, a narrow margin of fifth tergite visible; first three tergites and basal half of fourth finely, longitudinally, but irregularly striate, the striæ somewhat oblique on sides of second tergite, caudad; second suture narrowly impressed and crenulate, third normal; first and second tergites with a continuous median carina.

Stigma short and thick, its length four times width, radius inserted at about the middle; first abscissa of radius two thirds length of second; second cubital cell one and a third times as long

as high, a little narrowed apically; first transverse cubitus very slightly oblique, second perpendicular, slightly decolored, cubitus becoming obsolete beyond second cubital cell; recurrent vein joining cubitus a distance before second cubital cell equal to first abscissa of radius, intervening vein decolored; parallel vein inserted at lower third; submedian cell little longer than median; radial vein in hind wings entirely decolored and subobsolete, but its rudiment somewhat curved toward costa at middle; nervellus oblique.

LUZON, Laguna, Mount Maquiling (*Baker*).

Rhogas (*Aleirhogas*) *montanus* sp. nov.

Pale ferruginous, metanotum darker; antennæ apically, interocellar area, and dorsum of abdomen (stronger laterally) piceous; palpi stramineous; legs ochraceous. Wings faintly smoky, veins and stigma pale piceous, the latter discally paler.

Female: Length, 4 millimeters; ovipositor very short.

Head viewed from above with eyes small and little bulging, distance between them subequal to length of head; vertex strongly convex, its entire surface minutely, irregularly, and transversely wrinkled and shagreened; length of vertex back of ocelli subequal to length of exposed cheek margin and more than length of entire ocellar area; distance of ocelli from eyes one and a half times interocellar distance and nearly twice the short diameter of an ocellus; posterior ocelli separated by a distance about equaling the long diameter of an ocellus, anterior ocellus farther removed; occipital margin gently incurved. Face subquadrate, broader than long, very finely transversely wrinkled, with a short, slightly elevated median carina just below antennæ; mouth opening very small and narrow; clypeus short, transverse, apical and basal margins broadly incurved, subparallel; clypeal pits distant from eyes about five times their diameter. Head viewed from side with face prominent at antennæ, broadly rounded below to the prominent clypeus; cheeks very broad, much broader below than above, upper width about one half upper eye width; malar space very large, its length two thirds length of eye and greater than lower width of cheek; eye rather small, subelliptical, slightly narrower below. Maxillary palpi scarcely reaching tegulæ, third joint shorter than fourth, the latter not as long as fifth and sixth together; labial palpi very short, joints thick.

Antennæ longer than entire body, scape short and thick, but little narrowed to base, apical width three fourths of length,

funicle narrower than scape and about half its length, little narrowed apically; flagellar joints about twice as long as wide.

Mesonotum with a mere indication of trilobing, notauli large and strongly impressed as far as posterior median area, converging to separated points on hind margin, bounding a rather narrow depressed basal area, this area rugose and with an unusually long, slender, crenulated median furrow; remainder of metanotal surface and scutellar disk very minutely wrinkled and shagreened. Scutellum bifoveate anteriorly, foveae short and broad and separated by a sharp carina, each fovea within having several weak longitudinal rugae. Metanotum closely and irregularly reticulate-rugose and with a strong and nearly complete median carina; metapleura rugose throughout, more coarsely so in posterior half; spiracle small, circular, and with a complete, sinuate, longitudinal carina, passing beneath it; mesopleura in large part finely, thickly rugose, more coarsely so below wings; on lower half with a very broad, irregular, shallowly impressed, rugose depression, and at middle of posterior submargin a short, sharply impressed, vertical crease.

Abdomen about as long as head and thorax together, broadly sessile, with four fully exposed segments, second and third broader and becoming very gradually broader caudad; first segment broad and thick at base and near insertion abruptly elevated in two short, sharp, oblique, dorsal ridges, length a little greater than apical width, entire basal width more than half of apical; second tergite slightly shorter than first, subquadrate, its length three fourths the apical width, not depressed along basal border; third tergite three fourths as long as second and becoming slightly wider; fourth narrower and shorter than third; a narrow, strongly rounded margin of fifth tergite visible from above; first two tergites and basal two thirds of third, finely, longitudinally, but irregularly, striate, the striae somewhat oblique on sides of second tergite caudad; apical third of third tergite and all of fourth shagreened; second suture narrowly impressed and crenulate, third normal; first and second tergites and basal two thirds of third tergite with a median carina.

Stigma long, its length five times the width; radius inserted at two fifths of the length from base; first abscissa of radius one half length of second; second cubital cell one and one-third times as long as wide, a little narrower apically; first and second transverse cubiti nearly perpendicular and decolored; cubitus paler beyond second cubital cell, recurrent vein joining cubitus a

distance before second cubital cell equal to first abscissa of radius, intervening vein decolored; parallel vein strongly curved and inserted at lower third; submedian cell far longer than median; radial vein in hind wing obsolete; nervellus but little oblique.

LUZON, Benguet, Baguio (coll. *Baker*).

Rhogas (*Aleirhogas*) *exceptus* sp. nov.

Pale ferruginous throughout, legs a little paler, antennæ darker apically; interocellar area black; palpi stramineous. Wings very faintly smoky, stigma and veins stramineous.

Female: Length, 5 millimeters; ovipositor very short, but slightly exceeding apex of abdomen.

Head viewed from above rather narrow and long, with eyes small and strongly bulging, the distance between them a little less than length of head; vertex strongly convex, its entire surface strongly sculptured, back of ocelli very strongly transversely striate, at ocelli the striæ curving forward between ocelli and eyes; vertex very strongly narrowed back of eyes, length back of ocelli greater than exposed cheek margin and twice the length of entire ocellar area; ocelli small, ocellar area greatly contracted; distance from ocelli to eyes nearly four times interocellar distance and about three times the long diameter of an ocellus; posterior ocelli separated by a distance less than the long diameter of an ocellus, anterior ocellus not farther removed; occipital margin short and straight. Face subsexangular, appearing strongly produced below, owing to the very short eyes, longer than broad between eyes, subtransversely rugose above, smooth below, and on clypeus, with a distinct median carina in basal half; mouth opening very small and narrow; clypeus small, narrow and long, basal suture highly arched, apical margin strongly incurved; clypeal pits distant from eyes about five times their diameter. Eyes not at all emarginate opposite antennæ. Mandibles outwardly strongly sculptured. Head viewed from side with face a little prominent, its margin scarcely curved, clypeus very prominent; cheeks very broad, far broader below than above, upper width about one half eye width; malar space of great size, its length greater than entire eye length and far greater than lower width of cheek; eye small, very short and regularly subelliptical. Maxillary palpi reaching tegulæ, third joint slightly the longest, third and fifth subequal, sixth a little shorter; labial palpi very short, the joints thickened.

Antennæ considerably longer than entire body, scape short and thick, strongly narrowed to base, apical width three fourths

of length, funicle narrower than scape and a little more than half its length, strongly narrowed apically; flagellar joints about three times as long as wide.

Pronotum strongly extended, as long as head to anterior ocellus, and strongly sculptured. Mesonotum with a mere indication of trilobing, notauli very superficial and almost obsolete, completely so on posterior half; entire surface thickly and coarsely, but shallowly, reticulate-rugose, more strongly so on the broadly flattened posterior median area. Scutellum sex-foveate anteriorly, separating carinae low and in part irregular and outer foveae strongly oblique; disk of scutellum very broadly bifoveate. Metanotum closely, irregularly reticulate-rugose and with a strong and nearly complete median carina; metapleura rugose throughout, more coarsely so on posterior half; spiracle small, circular, and with a complete longitudinal carina passing beneath it; mesopleura in large part thickly rugose, more coarsely so below wings and along a median longitudinal line that scarcely represents a discal furrow, and at middle of posterior submargin a short, sharply impressed, vertical crease.

Abdomen about as long as head and thorax together, broadly sessile, with four fully exposed segments, the third broadest, first segment with basal ridges not high, its length subequal to basal width, entire basal width more than half of apical; second tergite slightly longer than first, widening apically, sides straight, its length subequal to apical width, not depressed along basal border; third tergite about three fourths as long as second, subrectangular, length somewhat greater than half width; fourth narrower and shorter than third, and with a subtruncate apical border; a very narrow, strongly rounded margin of fifth tergite visible from above; first to fourth tergites, except narrow hind borders of two latter, entirely, coarsely, irregularly, longitudinally striate, the striae somewhat laterally oblique on apical half of second tergite and on all of third tergite; striae on fourth tergite shallower; second suture very little impressed, not crenulate but with striae continuous across it; third suture normal; first, second, and basal half of third tergite with a median carina.

Stigma broad, its length about four times the width, radius inserted near the middle; first abscissa of radius four fifths length of second, second cubital cell small, one and a half times as long as wide, slightly narrowed apically; first transverse cubitus oblique, second perpendicular and decolored; cubitus paler beyond second cubital cell; recurrent vein joining cubital vein a distance before second cubital cell nearly equal to first abscissa

of radius, intervening vein decolored; parallel vein not strongly curved and inserted at lower fourth; submedian cell far longer than median, transverse median a little oblique; radial vein in hind wings decolored, nervellus oblique.

MINDANAO, Butuan (*Baker*).

Rhogas (*Aleirhogas*) *oculatus* sp. nov.

Ochraceous, entire flagellum darker, palpi stramineous, inter-ocellar area black and with a broad, irregular, longitudinal, median black stripe on dorsum of abdomen. Wings faintly smoky toward base, stigma sordid stramineous, veins pale brownish.

Male, length, 4.5 millimeters.

Head viewed from above rather narrow and long, eyes small and strongly bulging, the distance between them distinctly less than length of head; vertex convex, its entire surface strongly sculptured, back of ocelli very strongly transversely striate, at ocelli the striæ curve forward between ocelli and eyes; vertex very strongly narrowed back of eyes, length back of ocelli greater than exposed cheek margin and twice length of entire ocellar area; ocelli very small and ocellar area contracted; distance from ocelli to eyes about twice interocellar distance and about two and one-half times long diameter of an ocellus; posterior ocelli separated by a distance subequal to long diameter of an ocellus, anterior ocellus scarcely farther removed; occipital margin somewhat longer than in *R. exceptus* and distinctly incurved.

Face to mouth about as long as broad between eyes, rugose, smoother above and including clypeus, with a distinct median carina on basal half; mouth opening very small and narrow; clypeus small, narrow, and long, as long as broad; basal suture highly arched, apical margin strongly incurved; clypeal pits distant from eyes about five times their diameter. Eyes not at all emarginate opposite antennæ. Mandible outwardly smooth. Head viewed from side with face little prominent, its margin scarcely curved, clypeus very prominent; cheeks very broad, far broader below than above, upper width about one-half eye width; malar space of great size, its length subequal to eye length and much greater than lower width of cheek; eye small, very short and regularly subelliptical, almost subcircular, maxillary palpi reaching tegulæ, third and fourth joints subequal, fifth and sixth successively shorter; labial palpi slender.

Antennæ considerably longer than entire body; scape short and thick, strongly narrowed to base, apical width three fourths of length, funicle narrower than scape and a little more than

half its length, strongly narrowed apically; flagellar joints about three times as long as wide.

Pronotum strongly extended, as long as head to anterior ocellus, and strongly sculptured. Mesonotum rather distinctly trilobed, notauli distinct throughout but superficial and not crenulate, converging posteriorly to separated points on hind margin; surface thickly and coarsely reticulate-rugose, posterior median area but slightly depressed and with sculpturing slightly coarser. Scutellum sexfoveate anteriorly, separating carinae low and in part irregular, and outer foveae strongly oblique; disk of scutellum coarsely shagreened. Postscutellum very broadly bifoveate. Metanotum coarsely, closely, and irregularly reticulate-rugose and with a median carina only on basal third; metapleura rugose throughout, more coarsely so posteriorly; spiracle small, circular; mesopleura coarsely rugose, more coarsely so anteriorly and beneath wing, and on a short oblique discal area, which is slightly impressed.

Abdomen about as long as head and thorax together, broadly sessile, with four fully exposed and sculptured tergites, fifth partly exposed, third broadest; first segment with basal ridges not high, its length greater than apical width, entire basal width slightly more than two thirds of apical; second tergite slightly shorter than first, little widening apically, sides sinuate behind, its length subequal to apical width, not depressed along basal border; third tergite about three fourths as long as second, subrectangular, length about two thirds of width; fourth narrower and little shorter than third, and with a truncate apical border; fifth considerably exposed, about half width of third and half as long; first to fourth tergites, except narrow hind borders of two last entirely, coarsely, irregularly, longitudinally striate, striae on fourth tergite shallower; second suture very little impressed, not crenulate but with striae continuous across it; third suture normal; first, second, and third tergites and base of fourth tergite with a median carina.

Stigma broad, its length about four times its width, radius inserted near middle; first abscissa of radius two thirds length of second; second cubital cell small, nearly twice as long as wide, rather strongly narrowed apically; first transverse cubitus oblique, second perpendicular and decolored; cubitus a little pale beyond second cubital cell; recurrent vein joining cubitus a distance before second cubital cell nearly equal to length of first transverse cubitus and of first abscissa of radius, intervening vein decolored; parallel vein rather strongly curved before insertion, at lower fourth; submedian cell far longer than median,

transverse median a little oblique; radial vein in hind wings decolored, nervellus oblique.

LUZON, Laguna, Mount Banahao (*Baker*).

This species closely resembles *R. exceptus* in many respects, and might be supposed to be the male of that species, were it not for the numerous differences that are clearly specific.

Rhogas (*Aleirhogas*) *schultzei* sp. nov.

Bright ferruginous; legs, except at base, and antennæ piceous; interocellar area and palpi piceous; abdominal dorsum piceous to black beyond second segment. Wings slightly smoky, stigma and veins pale brown.

Male, length, 6 millimeters.

Head viewed from above broadly transverse, with eyes small and bulging, distance between them greater than length of head; vertex convex, its entire surface strongly sculptured, back of ocelli shallowly, but coarsely, transversely striate, the striæ not curving forward between ocelli to eyes; vertex strongly narrowed back of eyes, but occipital carina long and gently incurved; length of vertex back of ocelli a little less than length of exposed cheek margin and subequal to length of entire ocellar area; ocelli of medium size, ocellar area large; distance from ocelli to eyes about twice interocellar distance and about three times long diameter of an ocellus; posterior ocelli separated by a distance greater than the long diameter of an ocellus, anterior ocellus not farther removed.

Face to mouth wider than long, subquadrate, evenly rugose throughout, clypeus minutely roughened; a short median carina just below antennæ; mouth opening small and narrow; clypeus small and narrow, but broader than long, basal and apical margins strongly curved and subparallel; clypeal pits distant from eyes about eight times their diameter. Eyes very slightly emarginate opposite antennæ. Mandibles outwardly strongly sculptured. Head viewed from side with rather prominent upper carinated portion and clypeus; cheeks very broad, broader below than above, upper width about equaling eye width; malar space of great size, its length subequal to eye length and greater than lower width of cheek; eye small, elliptical. Maxillary palpi short, stout, not reaching tegulæ, fourth joint equaling fifth and sixth together, third shorter. Labial palpi very short, basal joints stout.

Antennæ shorter than entire body, scape short, evenly narrowed to base, length nearly twice the apical width, funicle much narrower and one half length of scape, strongly narrowed

apically; length of flagellar joints about one and a half times the width.

Pronotum broad and as long as head to fore margin of posterior ocelli, minutely roughened. Mesonotum not distinctly trilobed, notauli distinct throughout, but superficial, and crenulate only anteriorly, converging posteriorly to separated points on hind margin; surface finely rugose and shagreened, posterior median area slightly depressed and coarsely rugose. Scutellum sexfoveate anteriorly, separating carinae low, outer foveae oblique, but not strongly so; disk of scutellum subobsoletely rugose and shagreened. Postscutellum very broadly bifoveate. Metanotum very coarsely, thickly, irregularly rugose and with a complete median carina; metapleura rugose throughout; spiracle subcircular; mesopleura very irregularly and coarsely rugose, with a small smoothish shagreened area near center and a short vertical crease near middle of hind margin.

Abdomen a little longer than head and thorax together, broadly sessile, with seven fully exposed tergites, first four sculptured wholly or in part; third tergite broadest; length of first tergite subequal to apical width, entire basal width about two thirds of apical; second tergite slightly shorter than first, slightly widening apically, sides straight, its length somewhat less than apical width, not depressed along basal border; third tergite about three fourths as long as second, subrectangular, length little more than half width; remaining tergites rapidly narrower and shorter to sixth, which is very short, seventh as long as fifth, subtriangular in outline, point bluntly rounded, surface smooth and shining; first and second tergites coarsely, irregularly, longitudinally striate, third and fourth minutely rugose and shagreened basally to nearly smooth apically, fifth and sixth finely shagreened; second suture narrowly, deeply, sharply impressed, subcrenulate, and slightly curved caudad; remaining sutures normal; first and second tergites and basal half of third tergite with a strongly raised median carina.

Stigma broad, its length about four times its width, radius inserted near the middle; first abscissa of radius three fourths length of second; second cubital cell small, length one and one-third times width, scarcely narrowed apically; first transverse cubitus very slightly oblique, second perpendicular, curved, and decolored; cubitus a little pale beyond second cubital cell; recurrent vein joining cubitus a distance before second cubital cell nearly equal to length of first transverse cubitus and of first abscissa of radius, intervening vein decolored; parallel vein rather strongly curved before insertion, at lower fourth; submedian

cell far longer than median, transverse median a little oblique; radial vein in hind wing subobsolete, nervellus but little oblique and somewhat curved.

LUZON, Laguna, Mount Maquiling (*Baker*).

The female of this species agrees with the male in nonsexual structural characters, but is differently colored, the stigma and veins being dark brown, and the entire abdominal dorsum black. Four tergites are fully exposed as viewed from above and a narrow portion of fifth is also visible. The median carina on third tergite extends somewhat farther caudad. The hypopygium is piceous, shallow, rather short, and acute. The ovipositor but slightly surpasses apex of abdomen.

Length, 6.5 millimeters.

LUZON, Laguna, Mount Maquiling (*Baker*).

Another female specimen from Baguio, Benguet, has all of the coloring deeper, and the metanotum is entirely black, but there is no specific difference in structural characters.

Named for Mr. W. Schultze, formerly assistant entomologist in the Philippine Bureau of Science, now an active, independent entomologist, residing in Manila.

REVIEW

The Pre-Spanish Philippines | A suggestive scrap-book | for students | Manila: MCM . XIV | [By Austin Craig]. 16 pp., 8vo.

Particulars of the Philippines' | Pre-Spanish Past | (Austin Craig) | [etc: 16 lines] | Manila, MCM . XVI | (2), 29 pp., one plate, 8vo. (Press of E. C. McCullough & Co. Inc., Manila, P. I.)

The Malays | A study into the origin of | the foremost factor in the | peopling of the Philippines | [etc.: 19 lines] | Manila, MCM . XVI | 16 pp., 8vo. (Press of E. C. McCullough & Co., Inc., Manila, P. I.)

These interesting source pamphlets, compiled by the ingenious professor of history in the University of the Philippines, who is also a member of the Philippine Academy, form part of an attempt to penetrate the mystery that shrouds the origin of the present inhabitants of the Philippines and their cultural sources. Together with the contributions of Dr. N. M. Saleeby, also of the same Academy, on the history and culture of the Moros of the southern Philippines, they afford a valuable nucleus of material with which to enter upon the survey of this inviting, but hitherto neglected, field.

Professor Craig's pamphlet on Malays is largely extracted from General Forlong's *Short Studies in the Science of Comparative Religions*, which deals with the origin of the Malay race and its primitive religious ideas. Like Saleeby, Forlong believes that the Malays originated on the Asiatic mainland, entering the East Indies from the north and long remaining under the influence of Indian civilization. This theory finds philological evidence in its favor, and in addition to that mentioned by Forlong, another item might be cited from Philippine languages. Thus in the Tagalog there are not a few Sanscrit words,¹ and the term Malay itself, instead of being derived, as Forlong seems to think, from the Indian *mala* (hill), may be more probably connected with the Tagalog *malayo* (far) with its allusion to the long wandering of the race which Forlong emphasizes.²

They have thronged East Africa above 1000 years, and have even a colony at the Cape of Good Hope. They traded everywhere throughout Madagascar—their Malagasa,³ and the Mala-dvipas or Maldives. They colo-

¹ See Pardo de Tavera, *El Sanscrito en la lengua Tagalog*. Paris (1887).

² Malays, 2.

³ The similarity between Tagalog and Malagasay has been noted by Philippine writers.

nized 500 miles of the West Coast of India, still known as Mala-bar; the great islands of Sumatra and adjoining mainland known as the Malaka Peninsula, extending over some 700 miles; all the large island kingdoms of Java, Celebes and their dependencies and the extensive eponymous Molucca group.

The less familiar, but in its results more important, migration of the Malays northward is developed by Professor Craig in his two other pamphlets, especially the first.⁴ The strong Malay influence in Formosa is noted, and what is more interesting, the extension of the Malayan wave to Japan. To quote one of the sources:⁵

The Japanese people are a mixture of several distinct stocks. Negrito, Mongolian, Palasiatic and Caucasian features more or less blended, sometimes nearly isolated, are met with everywhere. The Negrito is the least prevalent. Prof. Baelz, who has drawn attention to this type along with the Malayan physiognomy, found it comparatively more pronounced in Kyushu (island of which Nagasaki is the port), where a Malayan immigration is believed to have taken place.

Apparently this author confuses Negrito with Malay, but any one familiar with certain racial types in southern Japan and their resemblance to Filipinos may well believe that a "Malayan immigration" reached there. But it seems not to have stopped even in Japan. To quote further:

Oppert was the first to note that in Korea are two types of faces, the one distinctly Mongolian, and the other lacking many of the Mongolian features and tending rather to the Malay type.⁶

Following the Malay migration the same author says:

From the Malay Peninsula we may imagine them spreading in various directions. Some went north along the coast, others into the Philippine Islands, then to Formosa, where Mr. Davidson, the best authority, declares that the Malay type prevails. The powerful Black Current, the Gulf Stream of the Pacific, naturally swept northward those who were shipwrecked. The Liu-Kiu Islands were occupied, and the last wave of this great dispersion broke on the southern shore of Japan and Korea, leaving there the nucleus of those peoples who resemble each other so that if dressed alike they cannot be distinguished as Japanese or Korean even by an expert. The small amount of work that has been so far done indicates a striking resemblance between these southern Koreans and the natives of Formosa, and the careful comparison of Korean language with that of Dravidian peoples of southern India reveals such a remarkable similarity, phonetic, stymologic and synthetic, that one is forced to recognize in it something more than mere coincidence.

⁴ The Pre-Spanish Philippines.

⁵ Munro, Prehistoric Japan.

⁶ Hulbert, The Passing of Korea, Chapter II.

Thus the Malays appear to have skirted practically the entire inhabited coasts of Asia and to have left a trail stretching from southern Africa to Korea.

Of the cultural influences affecting this widely scattered race, the Indian, as has been mentioned, was the first and most powerful. But in spreading northward, the Malays naturally encountered the civilization that was then dominant in eastern Asia—the Chinese. Craig shows how, as early as the third century of our era, Chinese writers probably mention what we know as the Philippines, grouping them with Formosa; and his chronological leaflet, issued separately from the other pamphlets, indicates that there has hardly been a century since in which reference to the Philippines fails to appear in some Chinese work.

Meanwhile communication between the two countries appears to have continued, persistently even if intermittently, until checked by unwise and ill-adapted immigration restrictions, and one begins to understand from the antiquity of this contact how it is that the Chinese people and their civilization have come to exert such an extensive and permanent, although withal unobtrusive, influence upon the Philippines. The motive of this contact seems to have been primarily commercial. The New History of the T'ang Dynasty, dealing with the period from the seventh to the tenth century of our era, states that—

When Chinese merchants arrive there, they are entertained as guests in a public building and the eatables and drinkables are abundant and clean.'

This takes as a matter of course the presence of Chinese merchants in the Philippines and points to long-established custom. Incidentally it affords an early instance of the proverbial Malay hospitality. A later work describes in greater detail the manner in which this trade was conducted, relating how the traders—

Live on board ship before venturing to go on shore, their ship being moored in midstream, announcing their presence to the natives by beating drums. Upon this the savage traders race for the ship in small boats, carrying cotton, yellow wax, native cloth, cocoanut-heart mats, which they offer for barter. If the prices (of goods they may wish to purchase) cannot be agreed upon, the chief of the (local) traders (賈豪) must go in person, in order to come to an understanding, which being reached the natives are offered presents of silk umbrellas, porcelain, and rattan baskets; but the foreigners still retain on board one or two (natives) as hostages. After that they go on shore to traffic, which being ended they return the hostages. A ship will not remain at anchor longer than three or four days,

'Particulars of the Philippines' Pre-Spanish Past, p. 10.

after which it proceeds to another place; for the savage settlements along the coast of San-su are not connected by a common jurisdiction.¹

One need not wonder, after tracing this phase of the subject, that the retail trade of the Philippines remains to-day in the hands of Chinese merchants.

But these old writers whose work is here made accessible have something more to record than commerce. Social customs, religious beliefs and practices, and even juridical conceptions find a place in their narratives. Thus the historian of the T'ang Dynasty above quoted informs us—

that these primitive inhabitants of the Philippines have no corporal punishments, all transgressions being penalized with fines in gold which vary according to the nature of the offense. Only robbers and thieves are made to suffer death.²

So in contrasting their marital customs with those of his own land he says:

It is not the custom to use go-betweens, or match-makers, in contracting a marriage. Some gold is paid to the relations of the girl and then she is married.³

The agreement of all this with what we know from other sources stamps the descriptions as accurate and genuine.

The materials collected by Craig furnish us glimpses of these relations between Chinese and Malays down to the time, when, about the middle of the fifteenth century, the Arab missionaries of Islam first appeared in the southern Philippines. At this point the notable and illuminating work of Saleeby commences, and we thus have the framework for a continuous record of the Malays under the successive influence of three of the most potential civilizations of Asia—the Indian, the Chinese, and the Arabic. Incidentally this reveals the unity and continuity of history and the solidarity of culture in the Far East. For it thus appears that the native races of this region are not isolated units having no relations with one another, but are sharers in a common civilization whose influence has been age-long and far-reaching.

CHARLES S. LOBINGIER.

¹ The Pre-Spanish Philippines, p. 4, reproducing extracts from the work of Chau Ju-kua on the Chinese and Arab Trade (in the 12th and 13th centuries).

² Particulars of the Philippines' Pre-Spanish Past, 10.

³ Op. cit., 11.

INDEX

[New names are indicated by the page numbers being printed in clarendon.]

A

Abryna ? *hoffmeisteri*, 250.
 ruficollis, 250.
Acanthocera, 98.
 punctifrons, 98.
Achras *sapota*, 40.
Acronia *pretiosa*, 249.
Adantincura, 134.
Agaristidae, 229.
Aleiodes, 883.
Aleirhogas, 411.
Aleurites *moluccana*, 40.
Aloa *bifrons*, 235.
 leucothorax, 235.
Amphicyphus *reticulatus*, 131.
Amystrops *monticola*, 337.
An tiow sam, 208.
Ang thoot sam, 207.
Anisosis *phalaris*, 125.
Anona *muricata*, 40.
 squamosa, 40.
Anthrax, 128.
Antidesma *bunius*, 40.
Antigonon *leptopus*, 40.
Antineura *sericata*, 133.
Antipatheus *abies*, 204.
Apbiochaeta *variata*, 107.
Aphrastobracon, a Philippine, 213.
Aphrastobracon *flavipennis*, 213.
 philippinensis, 213.
Aprophata, 250.
Arachis *hypogaea*, 40.
Arctia, 242.
 americana, 242.
 caja, 242.
 caja var. *phaeosoma*, 242.
 caja var. *wiskotti*, 242.
 opulenta, 244.
 orientalis, 242.
 phaeosoma, 244.
Arctiidae, 230.
Arctiinae, 234.
Arenga *saccharifera*, 40.
Argyramœba, 128.
Arsilonce *albovenosa*, 238.
Artapocerytus *pardalis*, 256.
 quadriplagiatus, 256.
 sexmaculatus, 256.
Artocarpus sp., 40.
Arytaina *punctipennis*, 170.
 tuberculata, 169.
 variabilis, 169.
Asarcina *eurytæniata*, 128.
Asarcus *consequens*, 128.
Asiatic and Philippine Psyllidae, 163.

Aspidiotus, 29.
 articulatus, 28.
 buxi, 39.
 circuliginis, 54.
 coryphae, 31.
 cydoniae, 30.
 cydoniae var. *greenii*, 30.
 destructor, 31.
 duplex, 33.
 lataniae, 30.
 orientalis, 24.
 rapax, 32.
 roseæ, 19.
 secreta, 17.
 semillimus translucens, 31.
 tayabanus, 32.
 translucens, 31.
Asplenium *nidus*, 40.
Astronia sp., 40.
Atherix *cærulescens*, 117.
 cincta, 117.
 fascipennis, 117.
 limbata, 117.
 lucens, 117.
Attacus *atlas*, 129.
Aulacaspis, 19.
 roseæ, 19.
Axona *chalcopyga*, 128.
Ayungin, 184.

B

Bah sam, 208.
BAKER, C. F., A Philippine *Aphrastobracon*, 213; *Ichneumonoid* parasites of the Philippines, I. *Rhogadiniæ* (*Braconidae*), 281; *Ichneumonoid* parasites of the Philippines, II, 333.
Baker, Nitidulidæ (*Coléoptères*) des îles Philippines récoltés par C. F., 329.
Balat, 205.
Balatan, 205.
Balate namaco, 205.
Banksiella, 76.
 pulchra, 76.
Basilan sponge beds, 193.
BATCHELDER, C. C., review of *Davenport's Heredity in Relation to Eugenics*, 262.
Bêche de mer, 205.
Bengalia, 107.
Benna, 59.
Bennaria, 59.
BEZZI, M., *Studies in Philippine Diptera*, II, 167.
Bibio *obediens*, 108.
 rubicundus, 108.
Bing thoot sam, 207.
Black bass, 184.

INDEX

[New names are indicated by the page numbers being printed in clarendon.]

A

- Abryna* ? *hoffmeisteri*, 250.
ruficollis, 250.
Acanthocera, 98.
punctifrons, 98.
Achras *sapota*, 40.
Acroria *retiosa*, 249.
Adantincura, 134.
Agaristidae, 229.
Aleiodes, 883.
Aleirhogas, 411.
Aleurites *moluccana*, 40.
Aloa *bifrons*, 235.
leucothorax, 235.
Amphicyphus *reticulatus*, 131.
Amystrops *monticola*, 337.
An tiow sam, 208.
Ang thoot sam, 207.
Anisosis *phalaris*, 125.
Anona *muricata*, 40.
squamosa, 40.
Anthrax, 128.
Antidesma *bunius*, 40.
Antigonon *leptopus*, 40.
Antineura *sericata*, 133.
Antipatheus *abies*, 204.
Aphiocheta *variata*, 107.
Aphrastobracon, a *Philippine*, 213.
Aphrastobracon *flavipennis*, 213.
philippinensis, 213.
Aprophata, 250.
Arachis *hypogaea*, 40.
Arctia, 242.
americana, 242.
caja, 242.
caja var. *phaeosoma*, 242.
caja var. *wiskotti*, 242.
opulenta, 244.
orientalis, 242.
phaeosoma, 244.
Arctiidae, 230.
Arctiinae, 234.
Arenga *saccharifera*, 40.
Argyramœba, 128.
Arsilonce *albovenosa*, 238.
Artapocyrus *pardalis*, 256.
quadriplagiatus, 256.
sexmaculatus, 256.
Artocarpus sp., 40.
Arytaina *punctipennis*, 170.
tuberculata, 169.
variabilis, 168.
Asarcina *eurytæniata*, 128.
Asarcus *consequens*, 128.
Asiatic and Philippine Psyllidae, 163.

- Aspidiotus*, 29.
articulatus, 28.
buxi, 39.
circuliginis, 34.
coryphæ, 31.
cydoniæ, 30.
cydoniæ var. *greenii*, 30.
destructor, 31.
duplex, 33.
latanise, 30.
orientalis, 24.
rapax, 32.
rosæ, 19.
secreta, 17.
semillimus translucens, 31.
taysabanus, 32.
translucens, 31.

- Asplenium* *nidus*, 40.
Astronia sp., 40.
Atherix *cærulescens*, 117.
cincta, 117.
fascipennis, 117.
limbata, 117.
lucens, 117.
Attacus *atlas*, 129.
Aulacaspis, 19.
rosæ, 19.
Axona *chalcopyga*, 128.
Ayungin, 184.

B

- Bah sam*, 208.
BAKER, C. F., A *Philippine Aphrastobracon*, 213; *Ichneumonoid* parasites of the *Philippines*, I. *Rhogadiniæ* (*Braconidae*), 281; *Ichneumonoid* parasites of the *Philippines*, II, 383.
Baker, Nitidulidae (*Coléoptères*) des îles *Philippines* récoltés par C. F., 329.
Balat, 205.
Balatan, 205.
Balate namaco, 205.
Banksiella, 76.
pulchra, 76.
Basilar sponge beds, 193.
BATCHELDER, C. C., review of *Davenport's Heredity in Relation to Eugenics*, 262.
Bêche de mer, 205.
Bengalia, 107.
Benna, 59.
Bennaria, 59.
BEZZI, M., *Studies in Philippine Diptera*, II, 107.
Bibio *obediens*, 108.
rubicundus, 108.
Bing thoot sam, 207.
Black bass, 184.

- Blumea balsamifera*, 40.
Boiga angulata, 366.
Bombyx caja, 242.
 griseola, 231.
Borboridae, 107.
 Borneo, a new genus of *Derbidae* from, 217.
 Bot, 205.
 Bot bantawan, 207.
 Bot bato, 206.
 Bot calang, 206.
 Bot gamat, 208.
 Bot hunas, 207.
 Bot ista, 207.
 Bot jadish, 208.
 Bot longa, 206.
 Bot uac, 206.
Brachymeles, a genus of Philippine *Hyzards*, 267.
Brachymeles *bicolor*, 272.
 bonitæ, 276.
 burksi, 275.
 eleræ, 273.
 gracilis, 270.
 schadenbergi, 268.
Brachypeplus *denticeps*, 330.
 hispidulus, 332.
 marginellus, 332.
 nitidus, 334.
 (*Selis*) *decoratus*, 329.
Braconidae, 282.
 Buoy hwah sam, 206.

C

- Caecilia*, 204.
Caesalpinia pulcherrima, 41.
 sappan, 225.
Calamaria gervaisii *iridescens*, 360.
 gervaisii *negriventris*, 362.
Calanthe sp., 41.
Callimorpha, 237.
Calotermes (*Neotermes*) *malatensis*, 221.
Calotes marmoratus, 371.
Campylocera thoracalis, 108.
 thoracalis var. *rufina*, 131.
Cardia, 168.
 cardata, 168.
Carica papaya, 41.
 Carpenter bees of the Philippine Islands, 345.
Carpophilus sinuatus, 341.
 (*Eidocolastus*) *subplanus*, 339.
Carsidara, 164.
Carsidaroida, 164.
 heterocephala, 165.
 Carus, Paul, Truth and other Poems (notice), 266.
Celtis philippensis, 41.
Cenchrinae, 57.
Cerambycidae, 249.
Ceroplastes, 11.
 gigas, 11.
 janeirensis, 11.
Ceropsylla, 172.
 Che bah sam, 208.
 Che sam, 207.
Chelonomorpha, 229.
 austeni, 229.
 japona, 229.

- Chermes hederæ*, 29.
Chersydrus granulatus, 356.
Chionaspis, 21.
 aspidistræ, 37.
 candida, 20.
 colemani, 36.
 inday, 20.
 nyssæ, 20.
 Choo bah sam, 208.
Chrysanthemum indicum, 41.
Chrysomphalus, 23.
 aonidium, 25.
 aurantil, 24.
 pedroniformis, 24.
 propeus, 25.
 rossi, 25.
Chrysomyia, 130.
Chrysopilus, 119.
 correctus, 120.
 diplostigma, 120.
 luctuosus, 120.
Citrus aurantium, 41.
 decumana, 41.
 nobilis, 41.
 sp., 41.
Coccidae of the Philippine Islands, 1.
Coccus, 15.
 aonidium, 23.
 axin, 5.
 diversipes, 15.
 elongatus, 15.
 hesperidum, 15.
 longulus, 15.
 ulmi, 34.
 viridis, 16.
 vitæ, 9.
 ziziphus, 26.
 COCKERELL, T. D. A., The carpenter bees of the Philippine Islands, 345.
Cocos nucifera, 41.
Codiaeum variegatum, 41.
Cœnosia marginata, 131.
Coffea arabica, 41.
Colastes, 291.
Colastomion, 290.
 abdominalis, 291.
Coleoptera fauna of the Philippines, fourth contribution to the, 249.
Coléoptères des îles Philippines récoltés par C. F. Baker, *Nitidulidae*, 229.
Collita lilacina, 232.
Comptosia, 130.
 dux, 129.
 macellaria, 130.
 marginalis, 130.
Conosia irrorata, 114.
Coptotermes travians, 223.
 Corals, 191.
 commercial, 204.
Corypha elata, 41, 73.
Cosymbotus platyrus, 370.
 Cotton-spinner, 205.
 Craig, Austin, *see* Reviews (book).
 CRAWFORD, D. L., Philippine and Asiatic Psyllidae, 163.

- Crysopelea*, 360.
 ornata, 366.
Culex pipiens, 177.
Cuticoides guttifer, 108.
 judicandus, 103.
 molestus, 108.
 pungens, 103.
Curculionidae, 250.
Cyaneoderes, 245.
Cycas circinalis, 41.
Cyclocorus lineatus, 359.
Cyclokara girdlestonei, 57.
Cypselidae (Borboridae), 107.
Cystomastax, 295.
- D**
- Dactylopiinae*, 6.
Dactylopius longispinus, 6.
Dalag, 184.
Damalina semperi, 123.
Damalis, 124.
 curvipes, 124.
Dasia amaragdinum, 373.
 Davenport, Charles Benedict, Heredity in Relation to Eugenics (reviewed), 262.
 de Vries, Hugo, The Mutation Theory Experiments and Observations on the Origin of Species in the Vegetable Kingdom (notice), 266.
Decora, 104.
 pavo, 104.
Delphacidae, a new genus of Philippine, 351.
Dendrelaphis caeruleus, 360.
 fuliginosus, 359.
 modestus, 359.
 terrificus, 360.
Dendrokara, 66.
 monstroa, 66.
 torva, 66.
Dendrophis pictus, 359.
Derbe, 52.
 sinuosa, 84.
 (Phenice) *monsta*, 95.
Derbidae, a new genus of, from Borneo, 217; of the Philippine Islands, 49.
Derbinæ, 79.
Devadanda, 63.
Diacrisia, 234.
 imparilis, 237.
 infernalis, 239.
 nivea, 236.
 robustum, 235.
 subcarnea, 234.
 subcarnea var. *flavoventris*, 235.
 virginica, 235.
Diaspinæ, 16.
Diaspis florinæ, 18.
Diatraea striatalis, 52.
Dibamus argenteus, 279.
Dillenia philippinensis, 41.
Dionychnopus niveus, 236.
Dioscorea alata, 41.
Diospyros kaki, 41.
Dicostrombus, 86.
Diptera, studies in Philippine, II, 107.
- Distantinia*, 102.
 nigrocacuminis, 102.
Dorthisia seychellarum, 2.
Draco ornatus, 370.
 spilopterus, 371.
Drosicha, 2.
 contrahens, 3.
 lichenoides, 4.
 palavanica, 4.
Dryophis, 360.
 prasinus, 366.
- E**
- Elaphe erythura*, 359.
Elassogaster plagiata, 135.
 trivittata, 135.
Ensima, 131.
Eosaccharissa, 71.
 fusca, 71.
 philippina, 71.
 pulchra, 71.
Epholchiolaphria aurifacies, 125.
 azurea, 125.
 leucoprocta, 124.
 partialis, 124.
 partita, 124.
 vulcanus, 124.
Epipsylla forcipata, 167.
 pulchra, 168.
Erastria mandschuriana, 230.
Eriocera, 112.
 bicolor, 114.
 cingulata, 114.
 crassipes, 114.
 lativentris, 113.
 mansueta, 113.
 verticalis, 113.
 (Physecrania) *mansueta*, 114.
 perennis, 114.
Eriodendron anfractuosum, 41.
Eristalis, 129.
Erythrophalum scandens, 41.
Estigmene acrea, 235.
Eugenia calubecob, 41.
 jambolana, 174.
 jambos, 41.
 malaccensis, 41.
Eumeces (Riopa) *gracilis*, 270.
 schadenbergi, 263.
Eupachyrrhynchus hieroglyphicus, 254.
Euphalerus citri, 168.
Euprepia opulenta, 242.
 phaeosoma, 242.
 var. *auripennis*, 242.
Euprosopia curta, 149.
 fusifacies, 153.
 gigas, 151.
 impingens, 151.
 lepidophora, 153.
 longicornis, 154.
 millepunctata, 153.
 tigrina, 150.
 trivittata, 150.
Eurybata hexapla, 155.
Eusemia japana, 229.
 villicoides, 229.

Eutermes minutus, 225.
 (*Eutermes*) *balintauacensis*, 224.
 (*Hospitalitermes*) *hospitalis*, 223.
luzonensis, 223.

Exoprosopa pennipes, 123.

F

Fenuahala maculipennis, 73.
Ficus caudatifolia, 41.
minahassae, 41.
nota, 41.
sp., 41.
Florinia, 18.
floriniae, 13.
phantasma, 19.

G

Gabaza, 117.
Gambusia affinis, 177.
Gan sam, 206.
Garcinia sp., 41.
Gardenia florida, 41.
Gekko gecko, 367.
monarchus, 363.
Genestia, 102.
Geranomyia argentifera, 117.
cornigera, 107.
Gitonides perspicax, 103.
Goneokara, 57.
pullum, 57.
Gonyocephalus sophiae, 371.
Gonyosoma oxycephalum, 359.
Gorgopsis cristiventris, 139.
Gossypium sp., 41.
Graptophyllum hortense, 41.
pictum, 41.
 GROUVELLE, A., *Nitidulidae* (Coléoptères)
 des îles Philippines récoltés par C. F. Baker,
 II, 329.
Gymnodactylus philippinicus, 367.
Gyroneuron, 213, 295.
Gyroneuronella, 320.
kokujewii, 321.

H

Habropogon, 121.
Hara-aka-hitori, 234.
Hay ten, 204.
Heliopora, 204.
Hemiberlesia, 29.
Hemichionaspis, 37.
aspidistræ, 39.
townsendi, 33.
uvariae, 33.
Hemidactylus frenatus, 368.
Hemigyroneuron, 322.
speciosus, 323.
suffusus, 325.
Heronax, 73.
maculipennis, 73.
Herpetolitha, 204.
Herpis, 59.
flavescens, 59.
pallidinervis, 60.
philippina, 59.
vulgaris, 59.

Heterocera, 229.
Heterogamus, 288.
longicollis, 288.

Hi sam, 205.
Hibiscus mutabilis, 41.
Hippoboscæ equina, 159.
maculata, 159.
Hitori-ga, 242.
Homaionema philippinensis, 41.
Homotoma bilineata, 164.
pacifica, 164.
Hurria rhynchops, 364.
Hyarias oberthüri, 235.
Hydrosaurus pustulosus, 371.
Hyo-mushi, 242.

I

Icerya, 2.
candida, 3.
jacobsoni, 2.
seychellarum, 3.
Ichneumonoid parasites of the Philippines, I.
Rhogadiniæ (Braconidæ), 281; *Ichneumonoid*
parasites of the Philippines, II, 383.
Ilema, 231.
ægrola, 231.
fuscicilia, 234.
griseola, 231.
lilacina, 234.
serva, 234.
subumbata, 234.
Indigofera, 170.
Ithyphenes bakeri, 334.
ustipennis, 335.
Ixora coccinea, 41.

J

Jada maculipennis, 96.
Japanese Lepidoptera and their larvae, 229.

K

Kaha, 63.
angulata, 70.
flava, 63.
leefmanii, 69.
media, 69.
pseudomedia, 69.
Kamendaka, 72.
flava, 73.
incommoda, 74.
luzonensis, 73.
maquilingensis, 73.
mindanensis, 72.
tayabasensis, 73.
versicolor, 73.
Kishita-hosoba, 231.
Kobuga, 230.
Koptorthosoma, 345.
Kurobane-hitori, 239.
Kurohane-hitori, 239.
Kuwa, 235.
Kuwa-gomadara-hitori, 237.
Kyo-joro, 236.

L

Lamenia, 61.
albicosta, 61.
bakeri, 61.

- Lamenia croceus*, 63.
 flavescens, 62.
 pallidinervis, 63.
 philippina, 62.
 pseudotypicus, 62.
Lamprogaster placida, 139.
Lanaphora, 351.
Lapemis hardwicki, 366.
Laphria dimidiata, 124.
Lecaniinae, 8.
Lecanium, 8.
 frenchii, 11.
 hemisphaericum, 13.
Lelolepisma pulchellum, 376.
 pulchellum grande, 374.
Leomelicharia, 99.
 delicata, 100.
 delicatissima, 101.
 nigrolineata, 101.
 nigrovittata, 99.
 pulchra, 101.
Lepidodactylus christiani, 368.
Lepidoptera, notes on Japanese, 229.
Lepidosaphes, 34.
 alba, 36.
 cocculi, 36.
 ixorae, 36.
 lasianthi, 35.
 luzonica, 35.
 mcgregori, 37.
 rubrovittatus, 35.
 unicolor, 37.
Lepista subumbrata, 232.
Leptaleocera, 77.
 bakeri, 77.
 bankai, 77.
 nigrofasciata, 77.
Leptocera (*Limosina*) *picturata*, 107.
Leptogaster princeps, 121.
Leucosyke capitellata, 42.
Levu, 103.
 irrorata, 103.
 lucida, 103.
Libnotes, 115.
 familiaris, 115.
 marginalis, 116.
 opaca, 116.
 rufa, 116.
 termitina, 117.
Liow, 205.
Liow oh nyeow sam, 205.
Lithosia adauca, 232.
 agrotæ, 232.
 amurensis, 232.
 cinerea, 232.
 flava, 232.
 fuscicilia, 232.
 lenta, 232.
 plumbeolata, 232.
 serva, 232.
 stramineola, 232.
 vetusta, 232.
Lithosiniæ, 231.
Litsea sp., 42.
 Lizards and snakes known from Negros, with descriptions of new species and new sub-species, 353.
 Lizards, *Brachymeles*, a genus of Philippine, 267.
Llaveia, 5.
 benguetensis, 5.
 luzonica, 6.
 sanguinea, 5.
 LOBINGIER, CHARLES S., review of Craig's Particulars of the Philippines' Pre-Spanish Past, 423; review of Craig's The Pre-Spanish Philippines, 423; review of The Malays, 423.
Losbañosia, 85.
 bakeri, 86.
Loxoneura decora, 138.
 var. *bakeri*, 138.
Lucilla, 130.
Luzon, termites from, 221.
Lygosoma lineatum, 275.
Lyperosia exigua, 130.
 M
Mabuya multicarinata, 371.
 multifasciata, 371.
Macaranga tanarius, 42.
Machilus sp., 42.
Macrocyrtus ? *benguetanus*, 255.
 var. *montanus*, 255.
 castaneus, 256.
 erosus, 256.
 negrito, 256.
 nigrans, 256.
 subcostatus, 256.
Macrostomion, 292.
 debilis, 292.
Macrostomionella, 294.
 philippinensis, 296.
 similis, 297.
Madrepora, 204.
Mala, 423.
Malayo, 423.
Mangifera indica, 42.
 verticillata, 42.
Manihot utilisima, 42.
 McGregor, a collection of termites from Luzon, obtained by R. C., 221.
 MCGREGOR, R. C., review of Wood's The Fundus Oculi of Birds, 261.
Meconorhynchus, 104.
 fuscus, 104.
 hyalinus, 104.
 kershawi, 104.
 nigropunctatus, 104.
Megarhogas, 299.
 longipes, 299.
 luteus, 299.
 mindanaensis, 303.
 minor, 299.
 philippinensis, 301.
 stigmaticus, 299.
 szepligetii, 306.
Megatropis, 75.
 coccineolinea, 75.
 flexicornis, 75.

- Megatropis immaculata*, 75.
 interruptolineata, 76.
 obliquefasciata, 75.
 pallida, 75.
 rubella, 75.
 sanguinea, 75.
Megistocera fuscata, 112.
Melanostomus mellinum, 128.
 mellinum (orientale), 131.
 orientale, 128.
Melnesia latipinnis, 178.
Mentha, 131.
Mesotrichia, 346.
 adusta, 347.
 aestuans, 348.
 amauroptera, 347.
 bakeriana, 347.
 bombiformis, 347.
 bryorum, 348.
 clavicus, 347.
 confusa, 348.
 cuernosensis, 348.
 dapitanensis, 348.
 euchlora, 348.
 ghilianii, 348.
 latipes, 349.
 subsp. *basioptera*, 349.
 major, 348.
 nigroplagiata, 349.
 nobilis, 348.
 occipitalis, 348.
 philippinensis, 348.
 philippinensis bilineata, 348.
 philippinensis chlorina, 348.
 sulcifrons, 348.
 tenuiscapa, 349.
 tricolor, 348.
 trifasciata, 349.
 vachali, 349.
 volatilis, 347.
Metapocyrtus carinatus, 257.
 cylas, 257.
 furcatus, 258.
Microcerotermes los-banosensis, 225.
Micropterus salmonoides, 184.
Milesia bigoti, 129.
 conspicienda, 129.
 reinwardtii, 129.
Milichidae, 108.
Mindana, 84.
 latifrons, 84.
Mindanao and Sulu, sea products of, 191.
Mischocarpus fuscescens, 21.
Moi whar che, 207.
Mongoma pennipes, 115.
Monochorhynchus, 217.
 wahri, 218.
Monophlebinae, 2.
Monophlebulus, 4.
 fuscus, 4.
 townsendi, 4.
Morinda bracteata, 42.
Morus alba, 235.
Mosquito fish, Gambusia affinis (Baird and Girard), in the Philippine Islands, 177.
MUIR, FREDERICK. The Derbidae of the Philippine Islands, 49; A new genus of Derbidae from Borneo, 217; A new Philippine genus of Delphacidae, 351.
Muiria, 99.
 iridescens, 99.
 stridula, 99.
Munsang, 205.
Musa sapientum, 42.
Musca, 130.
Mydæa duplex, 130.
 duplicata, 130.
Mydas basifascia, 121.
 fruhstorferi, 121.
 ruficornis, 121.
Mysidia, 52.
Mysidioides, 78.
 borneensis, 79.
 sordidum, 79.
 tagalica, 78.

N

Natrix dendrophlops, 357.
 dendrophlops negrosensis, 356.
 apilogaster, 356.
Naupoda contracta, 140.
 platessa, 140.
 unifasciata, 140.
Nebriassa, 86, 94.
 nitida, 86.
Negros, snakes and lizards known from, 353.
Neocamma, 95.
 trifasciata, 95.
Neocyclokara, 57.
 flava, 57.
Neodendrokara, 66.
 crenataformis, 66.
Neolamenia, 63.
 flava, 64.
Neolecanium cribrigerum, 12.
Neorhyssalus, 286.
 compositus, 287.
Nesokaha, 67.
 lineata, 67.
 nigropunctata, 67.
 philippina, 67.
 rubrinervis, 67.
Nicerta, 74.
 cruenta, 74.
 palawanensis, 74.
Nipa fructicans, 69.
Nisia, 52.
Nitidulidae (Coléoptères) des îles Philippines récoltés par C. F. Baker, II, 329.
Niwatoko, 237.
Nola albula var. *a. mandschurica*, 230.
 var. *mandschuriana*, 230.
Nolinae, 230.
Notapocyrtus alboplagiatus, 258.
 cylindricollis, 256.
 luzonicus, 256.
Nothybus longithorax, 155.
 triguttatus, 155.
Notopsila curta, 149.
 sempunctata, 149.

O

- Obako, 236.
 Obi-hitori, 234.
 Odonaspis, 17.
 schizostachyi, 17.
 Odoriko-ga, 242.
 Oe sam, 206.
 Oh nyeow sam, 206.
 Oligodon modestus, 359.
 Ophiocephalus striatus, 184.
 Ophites aulicus, 359.
 Orchisia costata, 131.
 Ortalidae, 103.
 Orthogonia scapularis, 125.
 OSHIMA, MASAMITSU, Notes on a collection of termites from Luzon, obtained by R. C. McGregor, 221.
 Otiocerinae, 61.
 Oxycalamus, 362.

P

- Pachyrrhynchus anellifer, 253.
 argus, 252.
 coerulans, 252.
 croesus, 249.
 forsteni, 249.
 igorota, 251.
 infernalis, 249.
 loheri, 252.
 modestior, 252.
 morotaisensis, 249.
 schultzei, 253.
 sumptuosus, 250.
 zebra, 253.
 Paragreenia, 345.
 Paragyroneuron, 318.
 bicolor, 319.
 Paralecanium, 11.
 cocophyllae, 12.
 luzonicum, 12.
 Paraproctista, 96, 217.
 fuscipennis, 97.
 luzonensis, 96.
 maculipennis, 96.
 platypes, 97.
 trifasciata, 96.
 Parasemia plantaginia, 237.
 Parasites of the Philippines, ichneumonoid, 281, 383.
 Parlatoria, 26.
 greeni, 28.
 pergandii, 28.
 proteus, 27.
 ziziphus, 27.
 Patara, 66.
 Paurocephala psylloptera, 163.
 Pauropsylla, 166.
 brevicephala, 163.
 Peggia, 86.
 irrorata, 87.
 nitida, 86.
 Peggiopsis dorsimaculata, 89.
 dorsopunctata, 91.
 flavicornis, 92.
 pallida, 90.
 pseudoflavicornis, 92.
 Peggiopsis pseudojavana, 90.
 pseudopuncticosta, 91.
 puncticosta, 91.
 stali, 93.
 Peh thoot sam, 207.
 Pelecystoma, 295.
 Perkinsiella, 52.
 Peropus mutilatus, 368.
 Petrorosia fulvipes, 128.
 fulvula, 128.
 gratiosa, 128.
 Phaciocephala, 58.
 badia, 58.
 funebria, 58.
 pseudobadia, 58.
 Phakena erinacea, 242.
 Phantasmatocera, 65.
 fuscofasciata, 65.
 vitiensis, 65.
 Phenacaspis, 20.
 chinensis, 22.
 dilatata, 21.
 eugeniae, 21.
 inday, 20.
 latissima, 22.
 megaloba, 22.
 mischocarpus, 21.
 pallida, 23.
 pellucida, 22.
 strobilanthis, 22.
 thoracica, 22.
 varicosa, 22.
 Philæmatomyia crassirostris, 130.
 gurnei, 130.
 inferior, 130.
 Philippine and Asiatic Psyllidae, 163.
 Philippine Aphrastobracon, 213.
 Philippines, Coleoptera fauna of the, 249.
 Phoridae, 107.
 Pinnaaspis, 39.
 buxi, 40.
 siphonodontis, 39.
 Piper loheri, 42.
 sp., 42.
 Plagiostenopterina trivittata, 150.
 Plantago major var. asiatica, 236.
 Platylecanium, 12.
 cribrigerum, 13.
 Platynema angusta, 336.
 Platynopoda, 349.
 Plecia fulvicollis, 168.
 Plectronia viridis, 42.
 Pogonosoma bleekeri, 125.
 cyanogaster, 125.
 funebre, 125.
 semifuscum, 125.
 Porites, 204.
 Prodobacia, 204.
 Promachus bifasciatus, 126.
 forcipatus, 126.
 Prometopia bakeri, 343.
 Proterosydne, 351.
 Prototulvaria, 8.
 convexa, 8.
 longivalvata bakeri, 9.

- Proutista, 95.
 moesta, 95.
 nigritarsis, 95.
 Prumus pseudocerasus, 230.
 Psalmodynastes pulverulentus, 366.
 Pselliophora annulosa, 111.
 incunctans, 111.
 praefica, 110.
 suspirans, 109.
 suspirans hilaris, 109.
 tripudians, 111.
 velutina, 111.
 Pseudaonidia, 33.
 articulatus, 28.
 circulignis, 34.
 obsita, 33.
 trilobitiformis, 33.
 Pseudopicausta chalybea, 136.
 Pseudococcus, 6.
 filamentosus, 8.
 kraunhiæ, 7.
 lilacinus, 7.
 sp., 103.
 tayabanus, 7.
 virgatus, 6.
 virgatus var., 7.
 Pseudogyronneuron, 316.
 mindanaensis, 316.
 Pseudorabdion, 362.
 Pseudorhabdium, 362.
 menamarae, 363.
 oxycephalum, 364.
 Psidium araca, 42.
 gusajava, 42.
 Psylla coccinea, 170.
 colorada, 170.
 crenata, 171.
 latis, 170.
 Psyllidae, Philippine and Asiatic, 163.
 Psyllopa, 170.
 punctipennis, 170.
 Pteragenomyia, 131.
 Pterogenia albobittata, 145.
 centralis, 143.
 dayak, 142.
 laticeps, 145.
 luctuosa, 143.
 luteipennis, 147.
 niveitarsis, 144.
 parva, 144.
 pectoralis, 147.
 tristis, 143.
 valida, 142.
 Pulvinaria, 9.
 ficus, 11.
 polygonata, 10.
 psidii, 10.
 psidii philippina, 11.
 thespesiae, 10.
 tyleri, 9.
 Pycnosoma, 130.
 Pyrrhoneura, 64.
 maculata, 64.
 Python reticulatus, 355.

Q

- Quercus glandulifera, 240.
 serrata, 240.

R

Rabdion, 362.

REVIEWS (book):

- Carus, Paul, Truth and Other Poems, 266.
 Craig, Austin, Particulars of the Philip-
 pines' Pre-Spanish Past, 423.
 Craig, Austin, The Pre-Spanish Philip-
 pines, 423.
 Davenport, Charles Benedict, Heredity in
 Relation to Eugenics, 262.
 de Vries, Hugo, The Mutation Theory
 Experiments and Observations on the
 Origin of Species in the Vegetable King-
 dom, 265.
 Wood, Casey Albert, The Fundus Oculi
 of Birds, 261.
 Rhinia testacea, 129.
 Rhinopsylla distincta, 166.
 Rhogadinae, 262, 383.
 Rhogas, 316, 382, 405.
 cameroni, 299.
 var. flavus, 387.
 exceptus, 412.
 melanosoma, 396.
 (Aleiodes) banksi, 403.
 benguetensis, 389.
 bicolor, 395.
 cameroni, 385.
 lateralis, 391.
 mimicus, 397.
 modestus, 400.
 pulavanicus, 387.
 separatus, 402.
 simillimus, 398.
 subquadratus, 313.
 (Aleirhogas) exceptus, 416.
 ferruginosus, 412.
 montanus, 414.
 oculatus, 418.
 schultzei, 420.
 (Rhogas) brownii, 405.
 luzonensis, 410.
 sanchezi, 408.
 Rhogasella, 311.
 lineata, 314.
 straminea, 312.
 Rhotana, 52, 103.
 basipunctulata, 103.
 excelsa, 103.
 punctovenosa, 103.
 Rhotaninae, 102.
 Rhyssalus, 284.
 ashmeadii, 285.
 unicolor, 284.
 Ribes grossularioides, 243.
 Rivellia, 136.
 costalis, 136.
 fusca, 138.
 hendeliana, 138.
 latifascia, 138.
 Robigus, 76.

- ROBINSON, ELIZABETH, Coccidae of the Philippine Islands, 1.
 Roeseia, 230.
 mandschuriana, 230.
 Rosa sp., 42.
- S
- Sacol Island sponge beds, 193.
 Saissetia, 13.
 hemisphaerica, 14.
 nigra, 14.
 oleosa, 13.
 Sakura, 230.
 Salix, 239.
 Samanea saman, 222.
 Sambucus racemosa, 237.
 Sandoricum koetjape, 42.
 Sarcophaga ruficornis, 129.
 Saropogon jucundus, 121.
 rubricosus, 121.
 specularis, 122.
 vertebratus, 121.
 Scamboneura dotata, 112.
 var. unicolor, 112.
 quadrata, 112.
 vittifrons, 112.
 Scelostenopterina femorata, 136.
 Schizaspia, 26.
 lobata, 26.
 Schizella, 119.
 furcicornis, 119.
 Schizostachyum acutiflorum, 42.
 Scholastes cinetus, 139.
 SCHULTZE, W., Fourth contribution to the Coleoptera fauna of the Philippines, 249.
 Scotinosoma typicum, 136.
 Seylaticus, 121.
 Sea cucumber, 205.
 Sea products of Mindanao and Sulu, III, 191.
 SEALE, ALVIN, The mosquito fish, Gambusia affinis (Baird and Girard), in the Philippine Islands, 177; Sea products of Mindanao and Sulu, III: Sponges, tortoise shell, corals, and trepang, 191.
 Selenaspides, 28.
 articulatus, 28.
 Senira bicolor, 263.
 Shiode, 229.
 Shiro-bitori, 236.
 Siaphos, 870.
 auriculatum, 377.
 Siasi sponge beds, 192.
 Sikaiana, 98.
 makii, 98.
 vitricaps, 99.
 Siphonodon celastreus, 42.
 Sitanki sponge beds, 191.
 Smeringolaphria alternans, 125.
 Smilax herbacea var. nipponica, 229.
 Snakes and lizards known from Negros, with descriptions of new species and new subspecies, 353.
 Solanum sp., 42
 Sphenomorphus arborens, 373.
 jagori, 372.
 steerei, 372.
 variegatum, 374.
 Spilarctia imparilis, 237.
 Spilosoma erubescens, 235.
 rybakowi, 235.
 subcarnea, 234.
 Spondias sp., 42.
 Sponge fisheries, 191.
 Sponges, 191.
 Stenopterina, 135.
 Stomoxys nigra, 130.
 Strogiloecephala, 166.
 fascipennis, 167.
 Strychnos nux-vomica, 42.
 Stylogaster bakeri, 157.
 frontalis, 157.
 Styringomyia ceylonica, 115.
 didyma, 115.
 Sulu and Mindanao, sea products of, 191.
 Sumangala, 102.
 Swezeyia laratica, 65.
 Syntames, 59.
 tubulifer, 59.
 Syrphus striatus, 128.
 Systropus aphecodes, 127.
 valdezi, 126.
- T
- Tachardia albizziae, 213.
 Tachinidae, 107.
 Taniaptera nigripes, 155.
 Tamarindus indica, 42.
 Tampopo, 236.
 Taraxacum officinale var. glaucescens, 236.
 Tawi Tawi sponge beds, 192.
 TAYLOR, EDWARD H., Brachymeles, a genus of Philippine lizards, 267; Snakes and lizards known from Negros, with descriptions of new species and new subspecies, 353.
 Telostylus niger, 155.
 Tenaphalara, 164.
 Termes (Macrotermes) philippinensis, 235.
 Terminalia nitens, 155.
 Termites, notes on a collection of, from Luzon, obtained by R. C. McGregor, 221.
 Tetrastigma, 42.
 Thanatarctia infernalis, 239.
 Thang nyeow sam, 206.
 Thang sam, 208.
 Thelycheta viridiaurea, 129.
 Theobroma cacao, 42.
 Therapon argenteus, 184.
 Thie chew, 204.
 Thoot ah sam, 208.
 Thoot sam, 208.
 Thracia, 80.
 javanica, 82.
 westwoodii, 82.
 Thyrocephalus croceus, 63.
 pseudotypicus, 62.
 Tiong, 205.
 Tiong oh nyeow sam, 206.
 Tipula gracillima, 112.
 inordinans, 112.
 magnicornis, 112.
 patricia, 112.
 pedata, 111.
 umbrina, 111.
 venusta, 112.

- Tipulidae, 107.
 Tipulodina cinctipes, 111.
 Toa, 205.
 Toa oh nyeow sam, 205.
 Toraga, 229.
 Tortoise shell, 191.
 Tortoise shell fisheries, 202.
 Toxophora javana, 128.
 silpa, 128.
 Trentepohlia pictipennis, 115.
 spelseri, 115.
 Trepang, 191.
 Trepang fisheries, 204.
 Trewia sp., 173.
 Tricholyza sorbillans, 129.
 Trigonophatnus, 308.
 nigricornis, 308.
 philippinensis, 309.
 Trimeresurus wagleri, 367.
 wagleri albiviridis, 368.
 Trioza asiatica, 171.
 divisa, 172.
 eugenis, 171.
 eugenioides, 171.
 fletcheri, 173.
 jambolanae, 173.
 luzonensis, 173.
 Tripang, 205.
 Tropicogastrella, 139.
 Tropidophorus grayi, 379.
 Tubipora, 204.
 Twa bing thoot sam, 207.
 Tylopterna, 131.
 monstrosum, 133.
 Typhlops braminus, 354.
 canlaonensis, 354.
 jagori, 355.
 ruficauda, 355.

 U
 Uvaria sp., 42.

 V
 Varanus nuchalis, 371.
 Vekunta, 60.
 lineata, 60.
 palawanensis, 60.
 Vitis vinifera, 24.
 Vizeaya, 351.
 bakari, 351.

- Volucella, 128.
 Voscanga globosa, 42.

W

- Wallacea argentea, 117.
 WILEMAN, A. E., Notes on Japanese Lepidoptera and their larvae: Part IV, 229.
 Withania origanifolia, 42.
 Wood, Casey Albert, The Fundus Oculi of Birds (reviewed), 261.

X

- Xanthosoma sagittifolium, 42.
 Xenaspis extranea, 134.
 pollistes, 134.
 Xenomyza, 124.
 vitripennis, 124.
 Xylocopa, 345.
 dissimilis, 346.
 fallax, 346.
 fuliginata, 346.
 mimetica, 346.
 rufescens, 346.
 sonorina, 346.
 tranquebarica, 346.

Y

- Yanagi, 239.

Z

- Zamboanga sponge beds, 193.
 Zeugma, 79.
 javana, 79.
 valdezi, 79.
 vittata, 79.
 Zoraida, 80.
 cumulata, 81.
 dorsopunctata, 81.
 flavicornis, 82.
 flaviventris, 83.
 hyalina, 83.
 insulicola, 81.
 javanica, 82.
 lutescens, 82.
 maculata, 81.
 melichari, 84.
 sinuosa, 84.
 westwoodii, 82.
 Zygenula paradoxa, 140.

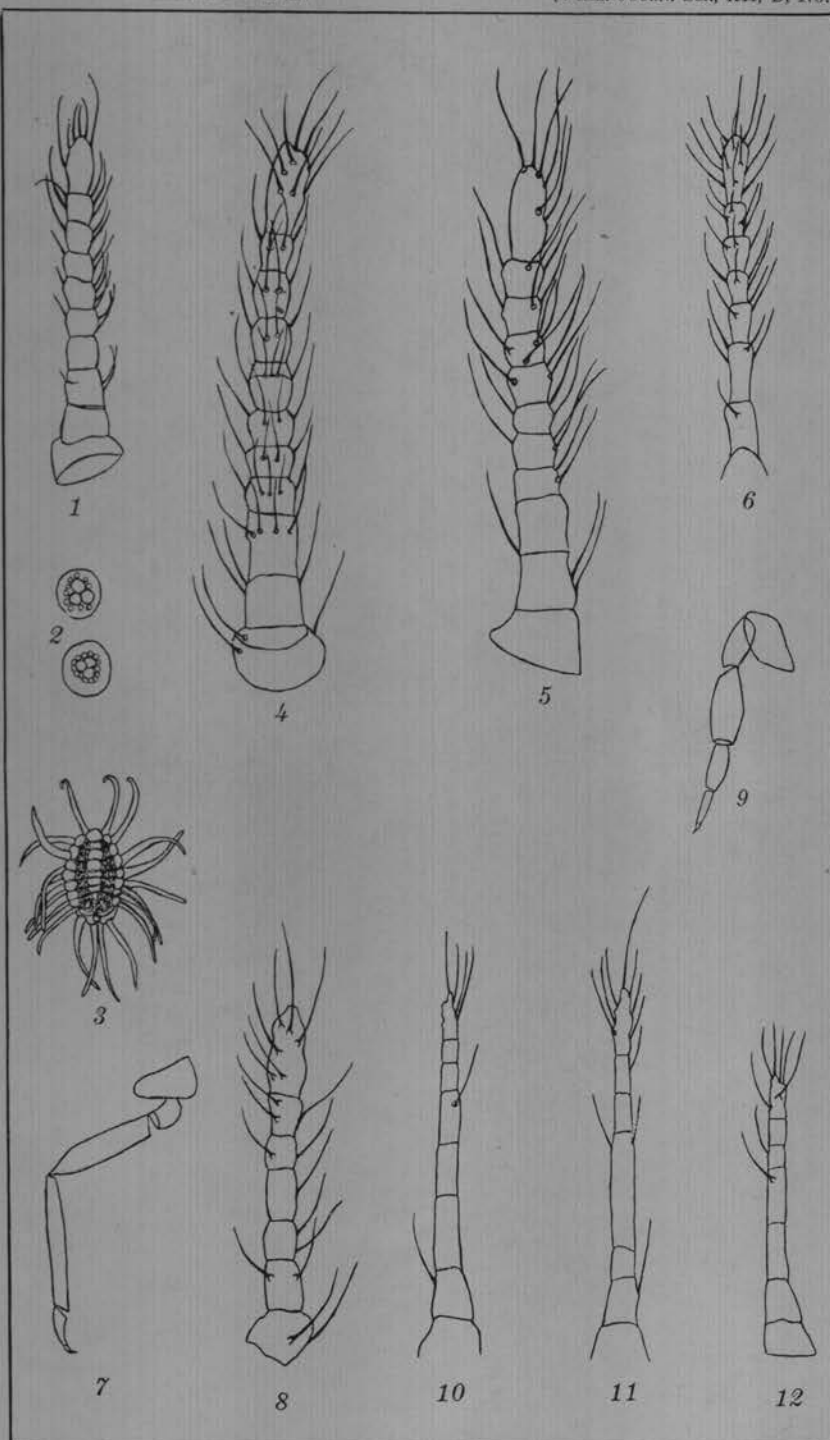


PLATE I. PHILIPPINE COCCIDÆ.

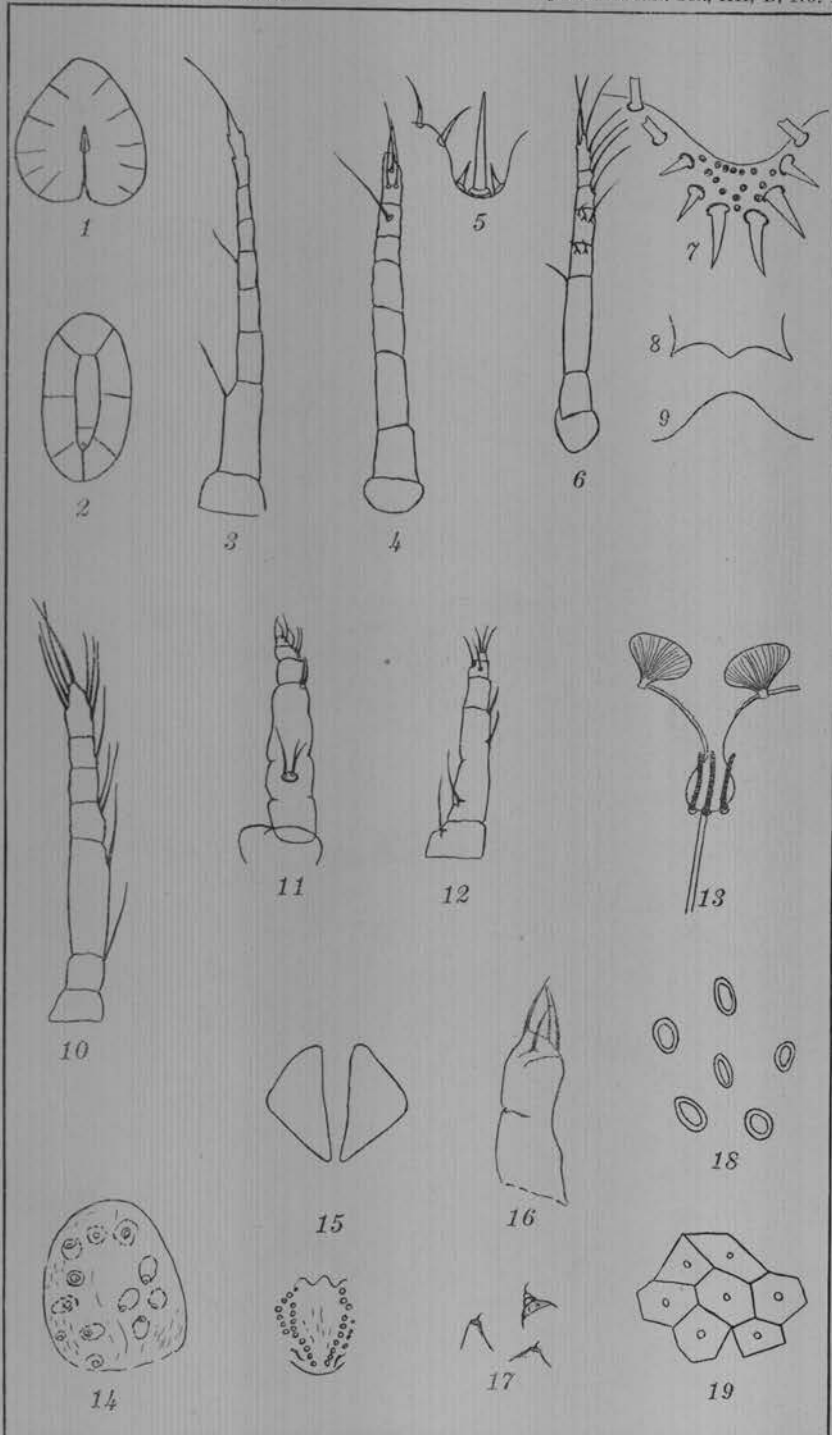


PLATE II. PHILIPPINE COCCIDÆ.

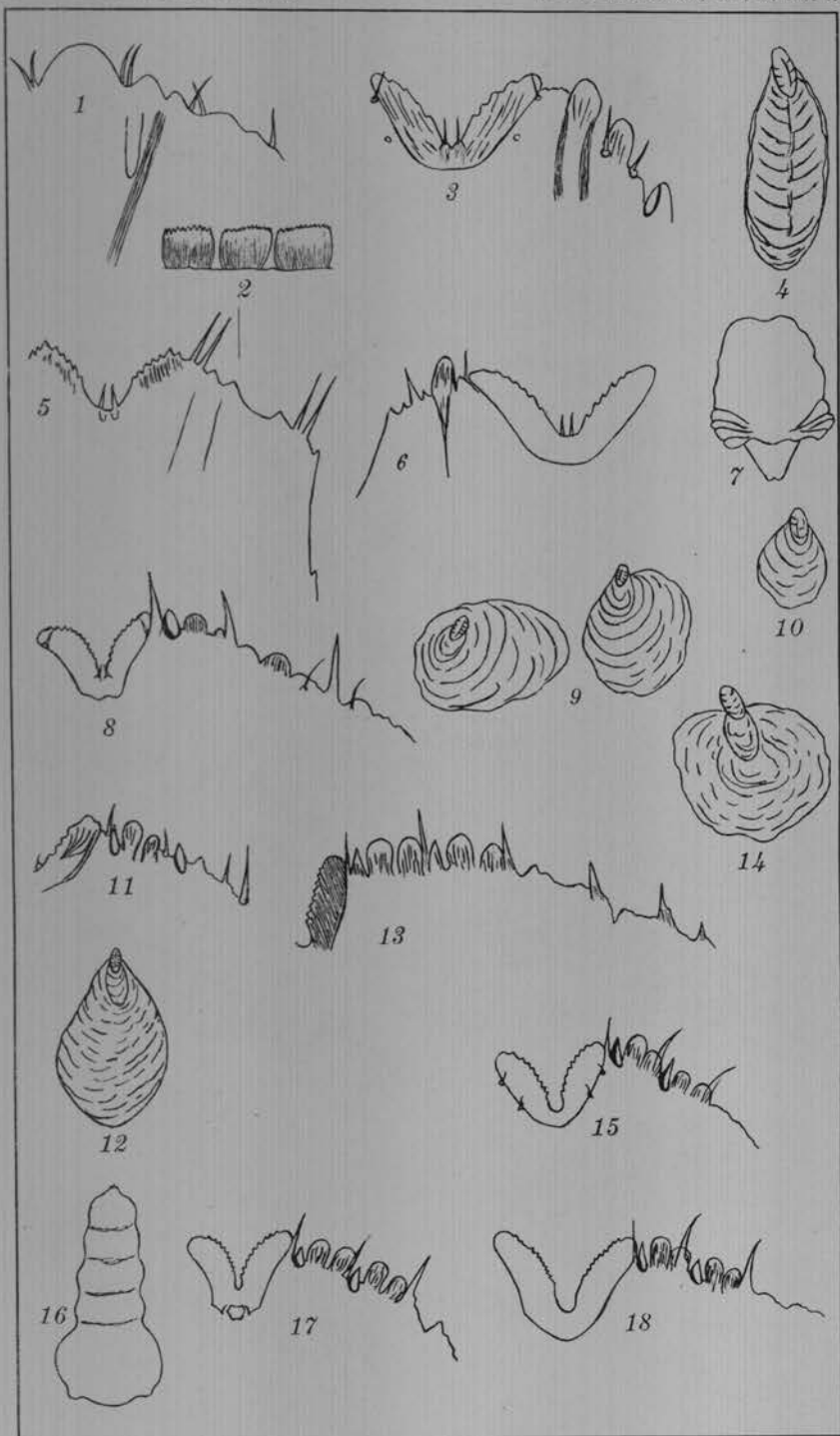


PLATE III. PHILIPPINE COCCIDÆ.

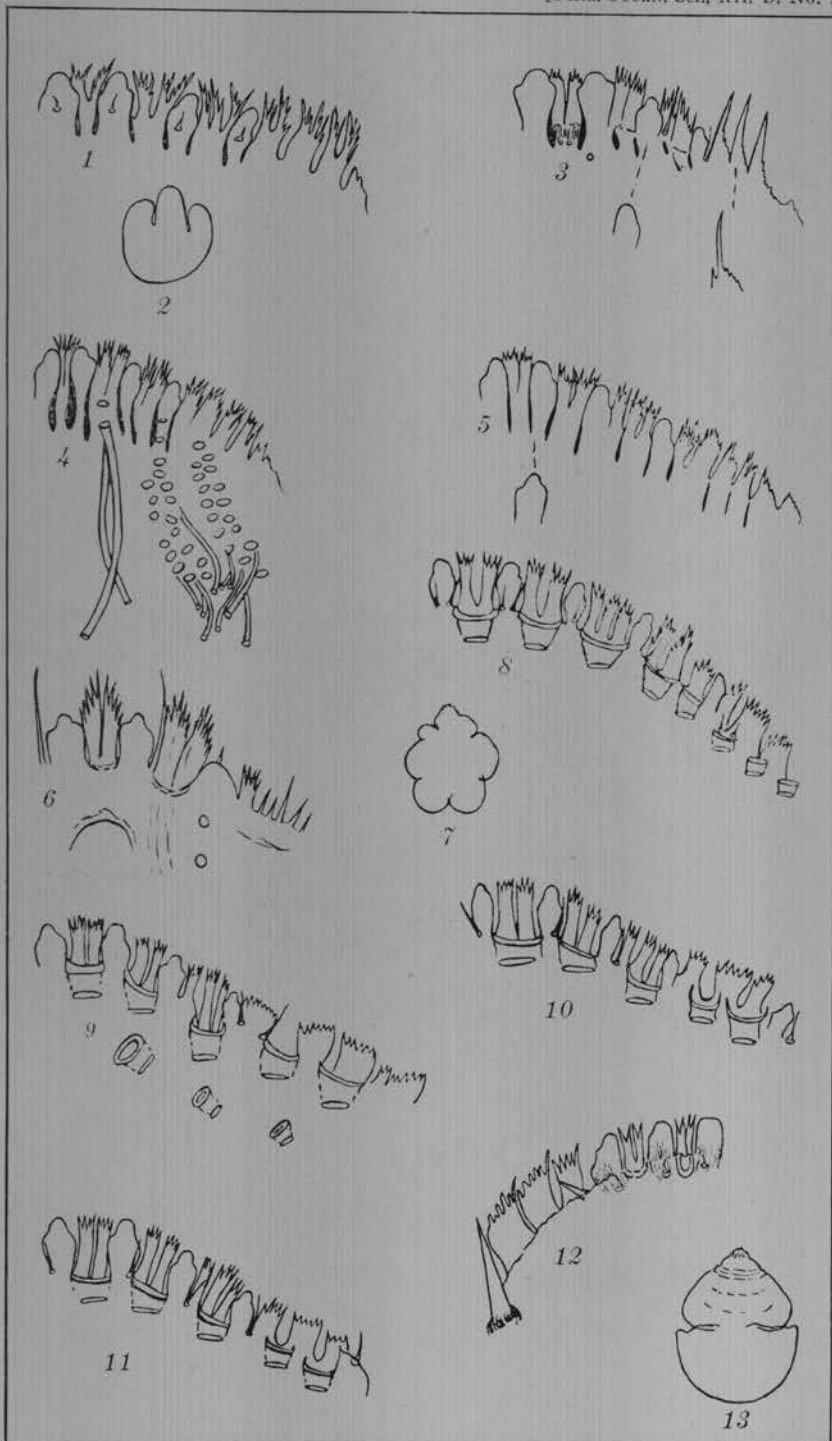


PLATE IV. PHILIPPINE COCCIDÆ.

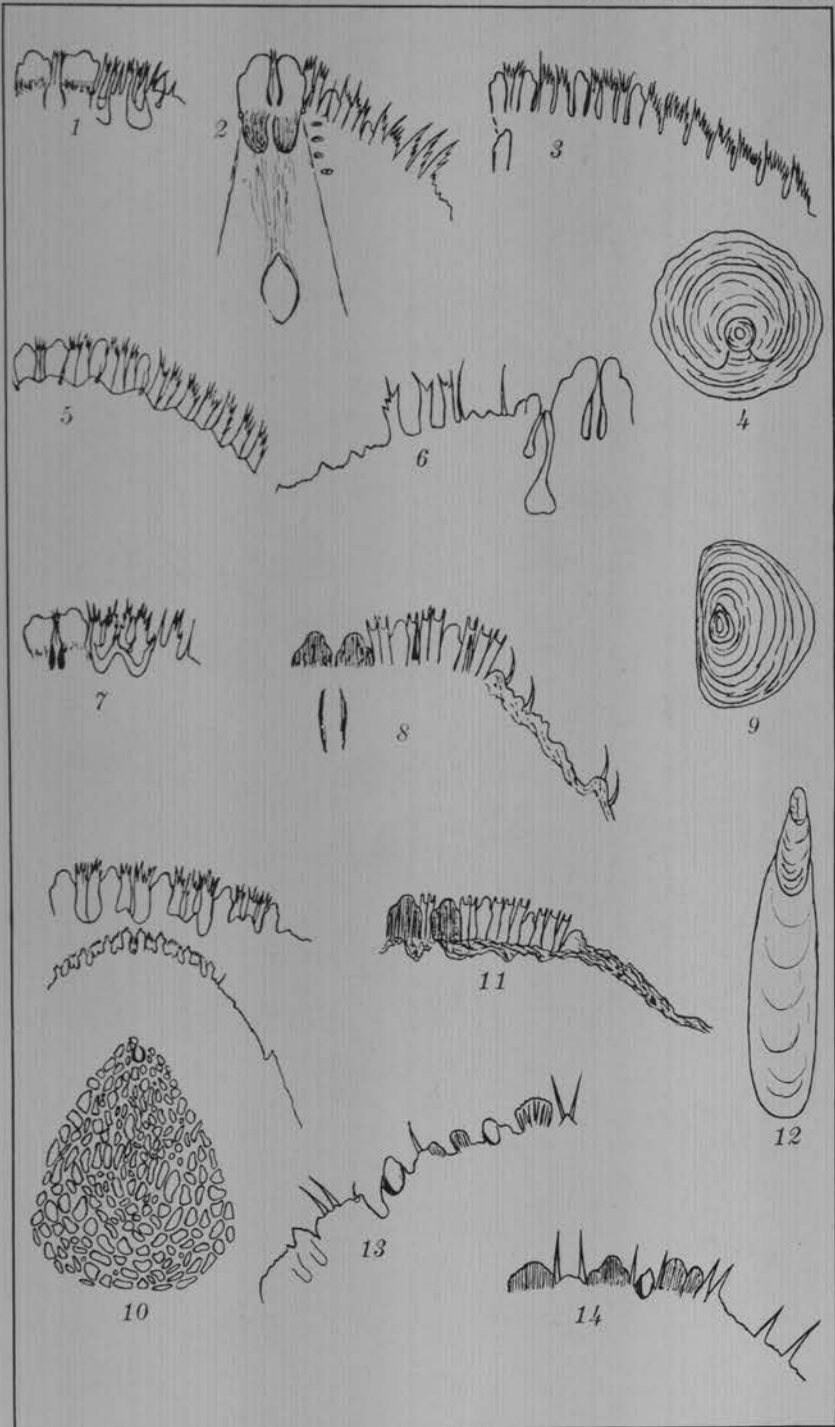


PLATE V. PHILIPPINE COCCIDÆ.

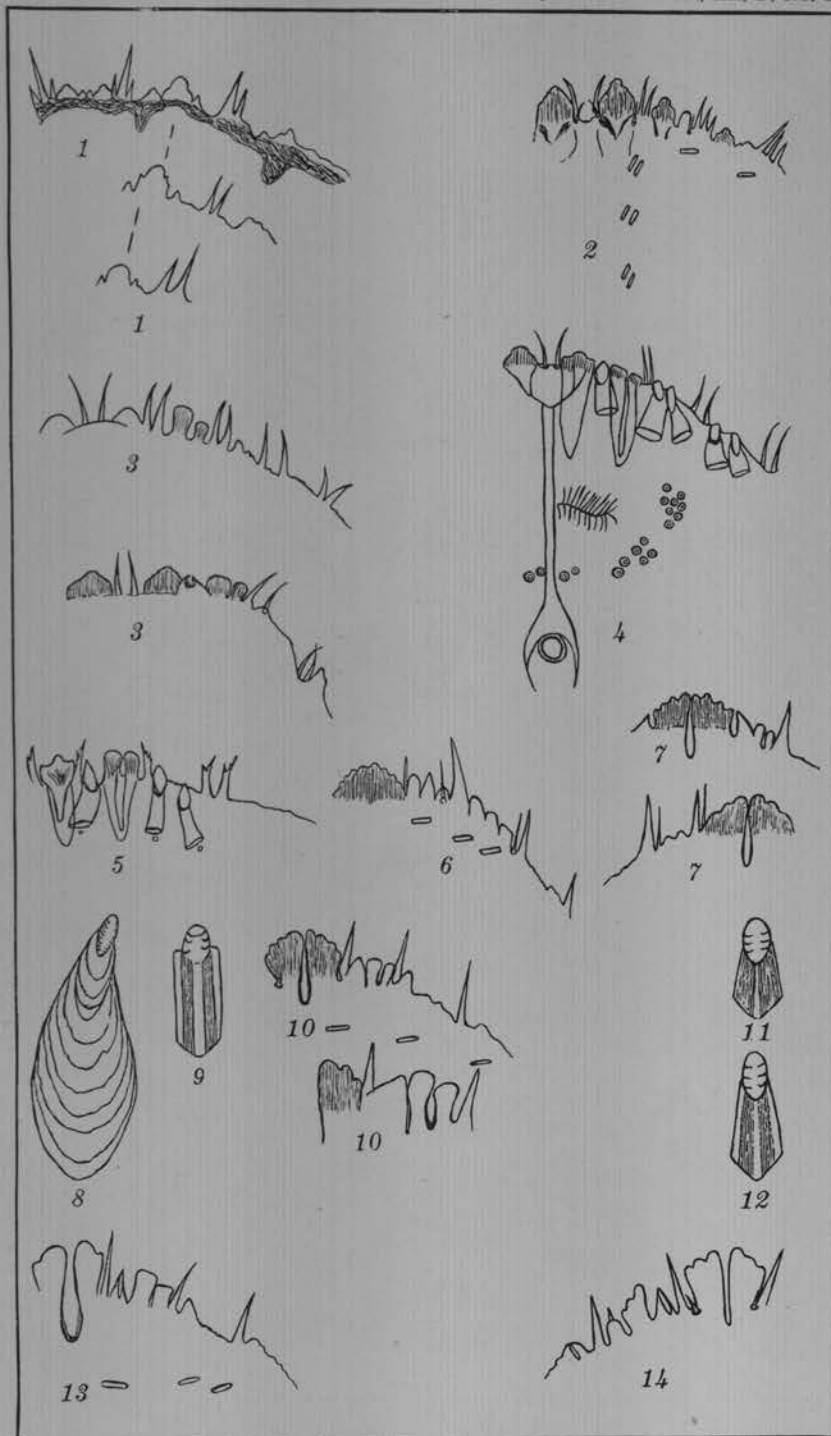
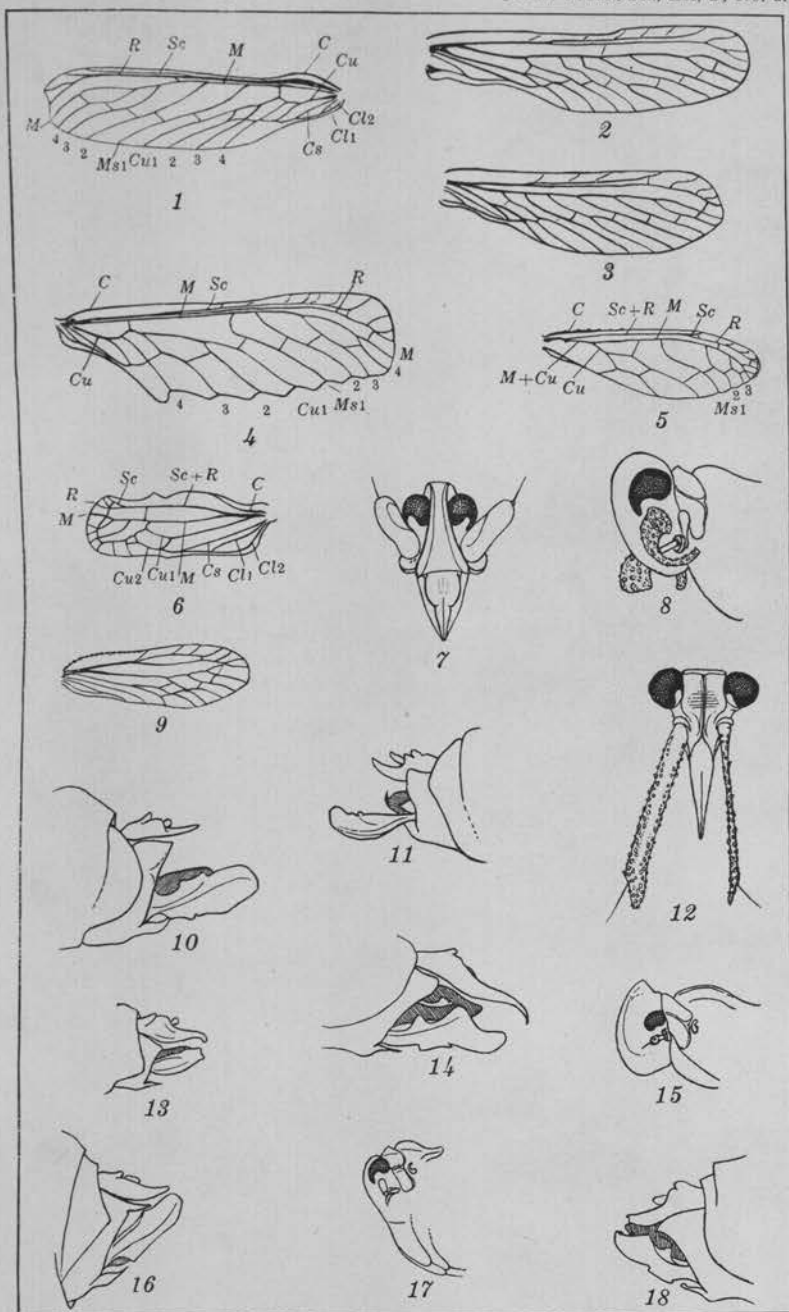


PLATE VI. PHILIPPINE COCCIDÆ.



· PLATE I. PHILIPPINE DERBIDÆ.

PUBLICATIONS FOR SALE BY THE BUREAU OF SCIENCE, MANILA, PHILIPPINE ISLANDS—Continued

BOTANY

A FLORA OF MANILA

By ELMER D. MERRILL

Order No. 419. Paper, 490 pages, \$2.50, postpaid.

Practically a complete flora of the cultivated areas in the Philippines. Descriptions, with keys, of over 1,000 species, 590 genera, and 136 families, with native names, glossary of technical terms, etc.

PHILIPPINE DIPTEROCARP FORESTS

By WILLIAM H. BROWN and DONALD M. MATTHEWS

Order No. 432. Paper, 150 pages, 1 map, 13 plates, and 12 diagrams, \$1.00, postpaid.

In Philippine Dipterocarp Forests the authors present a very comprehensive discussion of the growth and development of dipterocarp trees and of the other elements of lowland Philippine forests.

INDO-MALAYAN WOODS

By FRED W. FOXWORTHY

Order No. 411. Paper, 182 pages, 9 plates, \$0.50, postpaid.

In Indo-Malayan Woods, Doctor Foxworthy has brought together a large amount of accurate information concerning trees yielding woods of economic value.

ZOOLOGY

A LIST OF MAMMALS OF THE PHILIPPINE ISLANDS, EXCLUSIVE OF THE CETACEA

By NED HOLLISTER

Order No. 418. Paper, 64 pages, \$0.50, postpaid.

The distribution of each species is given, and the original descriptions are cited.

ZOOLOGY—Continued

A MANUAL OF PHILIPPINE BIRDS

By RICHARD C. MCGREGOR

Order No. 103. Paper, 2 parts, 769 pages, \$4, postpaid.

A Manual of Philippine Birds contains in compact form descriptions of all the known species of Philippine birds. The usual keys and diagnoses of orders, families, and genera help the novice in identification.

A CHECK-LIST OF PHILIPPINE FISHES

By DAVID STARR JORDAN and ROBERT EARL RICHARDSON

Order No. 102. Paper, 78 pages, \$0.75, postpaid.

This list will be found a convenient guide to the synonymy of Philippine ichthyology. The nomenclature is thoroughly revised, and the distribution of each species within the Philippine Islands is given.

A CATALOGUE OF PHILIPPINE COLEOPTERA

By W. SCHULTZE

Order No. 436. Paper, 198 pages, \$1.00, postpaid.

This catalogue includes the names of all species of Coleoptera that have been recorded from a definite locality in the Philippine Islands. References to original descriptions and other important notes are given. The economic appendix includes comment on those species of beetles which are known to be injurious or beneficial to man.

PRICES ARE IN UNITED STATES CURRENCY

Orders for these publications may be sent to the BUSINESS MANAGER, PHILIPPINE JOURNAL OF SCIENCE, BUREAU OF SCIENCE, MANILA, P. I., or to any of the agents listed below. Please give order number.

The Macmillan Company, 64-66 Fifth Avenue, New York, U. S. A.
Wm. Wesley & Son, 28 Essex Street, Strand, London, W. C., England.
Martinus Nijhoff, Lange Voorhout 9, The Hague, Holland.
Mayer & Müller, Prinz Louis Ferdinandstrasse 2, Berlin N. W., Germany.
Kelly & Walsh, Ltd., 32 Raffles Place, Singapore, Straits Settlements.
A. M. & J. Ferguson, 19 Baillie Street, Colombo, Ceylon.
Thacker, Spink & Co., P. O. Box 54, Calcutta, India.

CONTENTS

	Page.
TAYLOR, EDWARD H. Snakes and lizards known from Negros, with descriptions of new species and new subspecies.....	353
BAKER, C. F. Ichneumonoid parasites of the Philippines, II. Rhogadinæ (Braconidæ), II: The genus Rhogas.....	383
Review	423
Index	427

	U. S. currency.
The "Philippine Journal of Science" is issued as follows:	
Section A. Chemical and Geological Sciences and the Industries..	\$2.00
Section B. Tropical Medicine	3.00
Section C. Botany	2.00
Section D. General Biology, Ethnology, and Anthropology (Sec- tion D began with Volume V).....	2.00
Entire Journal, Volume II, III, IV, or V	5.00
Entire Journal, beginning with Volume VI	7.00
Single numbers (except of Volume I) .....	.50
<i>Each section is separately paged and indexed.</i>	
<i>Authors receive 100 copies of their papers free.</i>	
Volume I, 1906 (not divided into sections) and supplement, sold only with a complete file of section A, B, or C.....	10.00
Supplement to Volume I (botany)	3.50
Volume I (without supplement), sold only with a complete file of section A, B, or C.....	6.50
Single numbers of Volume I .....	.75

Publications sent in exchange for the Philippine Journal of Science should be addressed: Library, Bureau of Science, Manila, P. I.

Subscriptions may be sent to the BUSINESS MANAGER, Philippine Journal of Science, Bureau of Science, Manila, P. I., or to any of the agents listed below:

AGENTS

The Macmillan Company, 64-66 Fifth Avenue, New York City, U. S. A.
Wm. Wesley & Son, 28 Essex Street, Strand, London, W. C., England.
Martinus Nijhoff, Lange Voorhout 9, The Hague, Holland.
Mayer & Müller, Prinz Louis Ferdinandstrasse 2, Berlin, N. W., Germany.
Kelly & Walsh, Limited, 32 Raffles Place, Singapore, Straits Settlements.
A. M. & J. Ferguson, 19 Baillie Street, Colombo, Ceylon.
Thacker, Spink & Co., P. O. Box 54, Calcutta, India.

Entered at the post office at Manila, P. I., as second-class matter.